SUBMISSION ON

GOVERNMENT IMMOVABLE ASSET MANAGEMENT BILL

(As introduced in the National Assembly as a section 75 Bill; explanatory summary of Bill published in Government Gazette No. 28135 of 14 October 2005)

by

Built Care (Pty) Ltd

Immovable Asset and Maintenance Management Consultants

May 2006

INTRODUCTION

The Government Immovable Asset Management Bill (GIAMB) is a much needed and welcome initiative by the Department of Public Works (DPW) and we would first like to commend the Department on concept, content and quality of the Bill. We believe that this will go a long way to addressing many of the problems that currently exist in the management of immovable assets in the Public Sector in South Africa and in so doing create a more positive environment for immovable asset management in the country as a whole. There is no doubt that the Bill will bring South Africa in line with international best practice.

Through many years of active involvement in the public sector in South Africa members of the Built Care team have built up considerable experience in the public sector and would venture to add some comments which we believe may add value to the Bill and to its introduction and implementation in South Africa.

Built Care, as maintenance management technology specialists, has been actively involved, together with its development partner, the CSIR's Built Environment Unit, in the research, development and implementation of support systems for immovable asset management and maintenance at national and provincial level in South Africa. This has included involvement in current and recent projects as listed in Annexure A.

COMMENTS

1. *Asset Life-cycle*

Please refer to:

Definitions: Section 1 "Life cycle" on page 3, line 25: *""life cycle" means the period during which a custodian or user expects to derive benefits from the control or use of an immovable asset;"*

According to the International Council for Research and Innovation in Building and Construction (CIB), Publication 295, March 2004 (Jernberg *et al*, 2004) "life cycle" is defined as *"successive periods of a building component, starting with the design, the construction, the use, the maintenance, the demolition and reuse"*.

Life cycle is therefore longer than "*the period during which a custodian or user expects to derive benefits from the control or use of an immovable asset;"*

Since the formulation of Agenda 21 for global sustainable development at the UN Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992, the international focus on research in the built environment has shifted to durability and sustainability issues, particularly Service Life Prediction (SLP).

Service life is defined as the *"period of time after installation during which all conditions of a building or a building part meet or exceed the performance requirements".* (Jernberg et al, 2004).

The relationship between life cycle and service life is illustrated in Figure 1 and Figure 2 below.

From the above it appears that the GIAMB definition of life cycle is similar to the CIB definition of service life. Based on the above CIB definitions, which are current

international state-of-the-art, we respectfully recommend the replacement of the current definition of life cycle with the CIB definitions to bring the GIAMB in line with international standards and best practice.

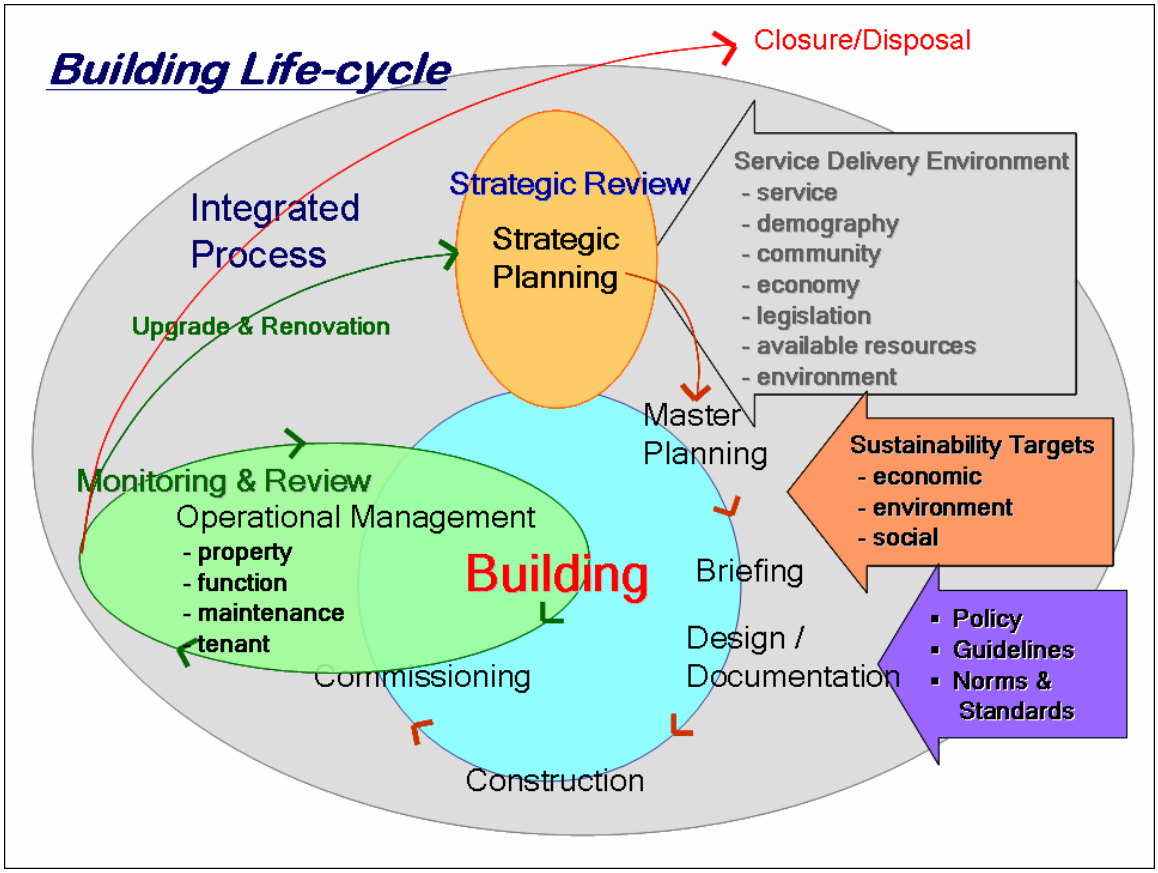


Figure 1: Life Cycle

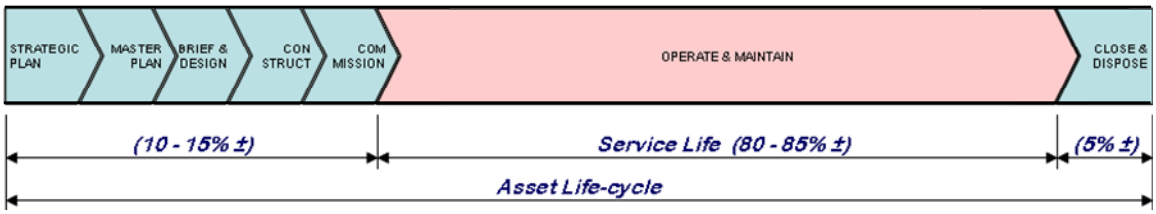


Figure 2: Service Life

2. Maintenance

This section deals with the use of the term “Maintenance”.

Please refer to:

Section 3 (d) (iii), page 4, line 7: *“the maintenance of existing immovable assets;”*

Section 5 (1) (c) (iii), page 5, line 5: *“the cost of the immovable asset as well as operational and maintenance cost…”*

Section 5 (2), page 5, line 20: *“… operation and maintenance plan and disposal plan.”*

Section 7 (e), page 5, line 48: *“the maintenance activities required and the total and true cost of the maintenance activities identified;”*

Section 8 (c), page 5, line 55: *“a maintenance and management plan;”*

Section 13 (1) (d) (v), page 6, line 47: *“determining the maintenance required to return the immovable asset to the state in which it would provide the most effective service;”*

Section 13 (1) (d) (vi), page 6, line 49: *“estimating the cost of the maintenance activities identified;”*

We respectfully propose the replacement of the term ***“maintenance”*** in these above mentioned sections with the term ***“preservation”*** for the following reasons:

Because there is no clear definition the term “maintenance” is commonly used to describe actions that are in fact not maintenance but mostly reactive repairs, rehabilitation and replacements. The term “day-to-day” maintenance is commonly used for routine maintenance actions and minor repairs, but also includes all sorts of other activities that do not qualify as maintenance. What are commonly referred to as “maintenance” are in fact ad hoc reactions to failures and breakdowns. Very little, if any, planned preventative maintenance, the most desirable and cost effective type of intervention to prevent the degradation and failure of immovable assets, is done. Preventative maintenance is normally limited to statutory compliance or decorative requirements.

Maintenance can be defined as all interventions intended to retain an asset in a good condition or a state in which it can perform its required function. The emphasis is on prevention of degradation or deterioration in order to retain or ‘maintain’ the asset in a desirable condition.

Preservation can be defined as all actions intended to retain an asset in, or restore it to, a state in which it can perform its required function and comprises of the following actions:

- **Maintenance**
  - Planned Maintenance
    - Preventative Maintenance (including statutory requirements, e.g. OHS Act, etc.)
    - Condition-based Maintenance
  - Unplanned Maintenance
    - Minor Repairs and Replacements due to
      - Breakdowns
      - Incidences
- **Repairs and Rehabilitation**
  - Major Repairs
  - Rehabilitation
- **Replacement**

The main objective of the above recommendation is to ensure the implementation of a ***planned preventative maintenance programme***. If this is not done, funds intended for maintenance will keep on being used for repairs, rehabilitation and replacements, with little or none left for maintenance, resulting in escalating maintenance backlogs and loss of valuable assets in a time when all available resources, including funds, should be used to the optimum to ensure growth and eradication of housing backlogs and poverty.

Condition-based maintenance costs twice as much as planned preventative maintenance, repairs ten times, rehabilitation 25 times and replacement 50 times as much as planned preventative maintenance. It is therefore essential to provide a framework that will encourage planned preventative maintenance.

3. *Minimum contents of custodian and user immovable asset management plans*

Please refer to:

Section 7 (e), page 5, line 48: *"the maintenance activities required and the total and true cost of the maintenance activities identified;"*

The true cost of maintenance activities (or preservation) can only be established after completion of the activities, we therefore respectfully propose the replacement of the words *"and true"* with "estimated" to read: *"the maintenance activities required and the total* estimated *cost of the maintenance activities identified;"*

Please refer to:

Section 7 (f), page 5, line 50: *"a disposal strategy and management plan."*

Section 8 (d), page 5, line 56: *"a disposal plan"*

It is not clear whether these two clauses intend the compilation of disposal strategies and plans for all immovable assets covered by the immovable asset management plan or only assets identified as redundant. We respectfully propose the following wording for these two clauses:

Section 7 (f), page 5, line 50: *"a disposal strategy and management plan <u>for redundant immovable assets or immovable assets that have reached the end of their service lives</u>."*

Section 8 (d), page 5, line 56: *"a disposal plan <u>for redundant immovable assets or immovable assets that have reached the end of their service lives</u>"*

4. *Condition Assessment and Performance Evaluation*

Please refer to:

Section 13 (1) (d) (iii), page 6, line 44: *"assessing the condition of the immovable asset at least every fifth year;"*

and

Section 13 (1) *(e),* page 6, line 50*: "establish and execute a performance measurement system as prescribed."*

We respectfully proposed the following:

a) Condition assessments should be done at least every **three** years and not five years for the following reasons:

- Building components/elements/materials/equipment/installations have different degradation/deterioration rates and service lives ranging from months to more than a hundred years (e.g. paint, floor coverings, roofs, walls, windows, doors, sanitary fittings, etc. all have different service lives). The service life of some of these components could be less than five years, and if an assessment is done only once every five years it could result in the condition of some components only being assessed when it has already deteriorated beyond repair.
- Due to budget restrictions it is seldom possible to attend to all assets even during a five year period. The amount of degradation over a five year period is high and condition assessment data ages rapidly resulting in annual maintenance budgets become increasingly inaccurate because they are based on historic information that does not provide for changes in condition due the degradation and preservation interventions. This is one of the reasons why existing maintenance (preservation) budgets are inaccurate and unreliable. Maintenance (preservation) budgets must be condition-based. This is however seldom the case and in general most budgets are based on an amount allocated by Treasury based on previous expenditures without any consideration of the current condition of the immovable assets resulting in gross underfunding especially in provincial government departments, and this is one of the main reasons why our immovable assets are in a state of neglect.

- Analysis of assessments, supported by research, has indicated that the degradation rate of a total public building varies between 3% and 6% with an average of 5%± over a five year period. Please refer to Figure 3 below for an illustration of the change in average condition of a total building over time. If the building components/elements/materials/equipment/installations are considered individually the degradation rate could be much higher and as much as 100% over a five year period. When the asset is in a good condition, this degradation does not have a major financial impact on the building as a whole or the budget, but when the condition of the asset has deteriorated it could have disastrous effects. Condition-based maintenance costs twice as much as planned preventative maintenance, repairs ten times, rehabilitation 25 times and replacement 50 times as much as planned preventative maintenance.

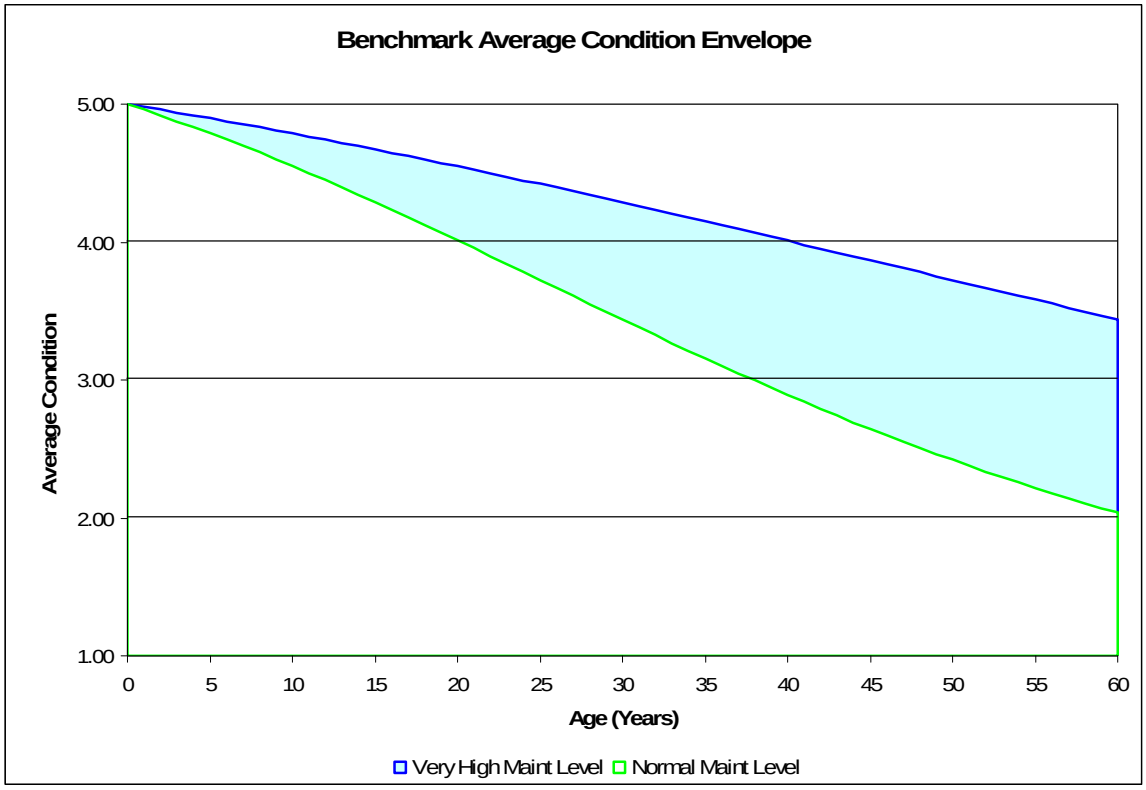


Figure 3: Change in condition of a building as a whole over time

- The PFMA allows contracts periods to a maximum of three years. Experience through involvement in national and provincial government projects has shown that three year maintenance contracts are not only more cost effective, but also result in an improvement in the general condition of the immovable asset because it encourages planned preventative maintenance. A three year condition assessment cycle not only ties in with cost effective maintenance contract periods, but also with PFMA requirements.

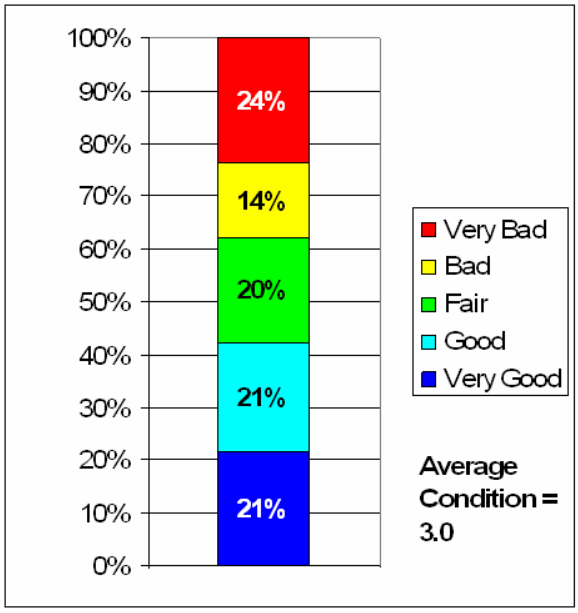
b) Condition assessments should be scheduled over the three year cycle to ensure that all immovable assets are assessed at least once every three years and to distribute the financial burden over the three years.

c) A uniform assessment rating system should be introduced to ensure consistency between departments and provinces ("to compare apples with apples"). Please refer to Table 1 below for an example of such a system, developed by us in close collaboration with the CSIR (Built Environment, formerly Boutek) over a period of ten years, which is in line with international best practice.

CONDITION RATING	Condition	Action Required	Description
5	Very Good	Planned Preventative Maintenance	The component or building is either new or has recently been maintained, does not exhibit any signs of deterioration
4	Good	Condition-based Maintenance	The component or building exhibits superficial wear and tear, minor defects, minor signs of deterioration to surface finishes and requires maintenance/servicing. It can be reinstated with routine scheduled or unscheduled maintenance/servicing.
3	Fair	Repairs	Significant sections or component require repair, usually by a specialist. The component or building has been subjected to abnormal use or abuse, and its poor state of repair is beginning to affect surrounding elements. Backlog maintenance work exists.
2	Bad	Rehabilitation	Substantial sections or component have deteriorated badly,suffered structual damage or require renovations. There is a serious risk of imminent failure. The state of repair has a substantial impact on surrounding elements or creates a potential health or safety risk.
1	Very Bad	Replacement	The component or building has failed, is not operational or deteriorated to the extent that does not justify repairs, but should rather be replaced. The condition of the element actively contributes to the degradation of surrounding elements or creates a safety, health or life risk.

Table 1: Proposed Condition Rating System

The proposed rating system is colour-coded to make it more user-friendly to non-technical persons and reporting.



By assessing the percentage of the asset in each category it is possible to compile a profile that provides a more accurate graphic illustration as shown in Figure 4. Condition profiles are essential for effective immovable asset management. Not only does it provide a graphic illustration of the percentages in each condition profile and therefore preservation actions, but by doing regular condition assessments it can also be used to measure the effectiveness of preservation actions (maintenance, repairs, rehabilitation and replacement) over time. It also provides a mechanism to compare departments, provinces and types of immovable assets on an equitable basis.

Figure 4: Typical Condition Profile

We would strongly recommend that the GIAMB guidelines to be developed provide for the inclusion of condition profiles in the proposed immovable asset management plans.

The following pages contain some illustrations of how this condition rating system can be applied for reporting and management purposes. A uniform and consistent approach will make bench marking in the government sector possible and is a very powerful management and monitoring tool.

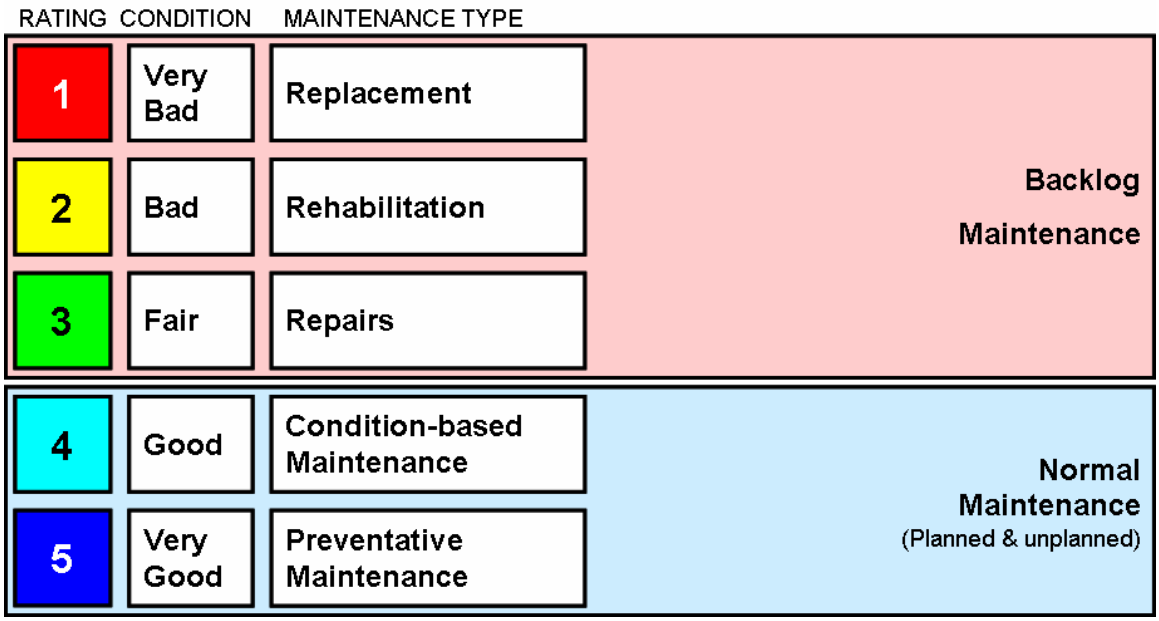


Figure 5: Condition Ratings vs Maintenance Type

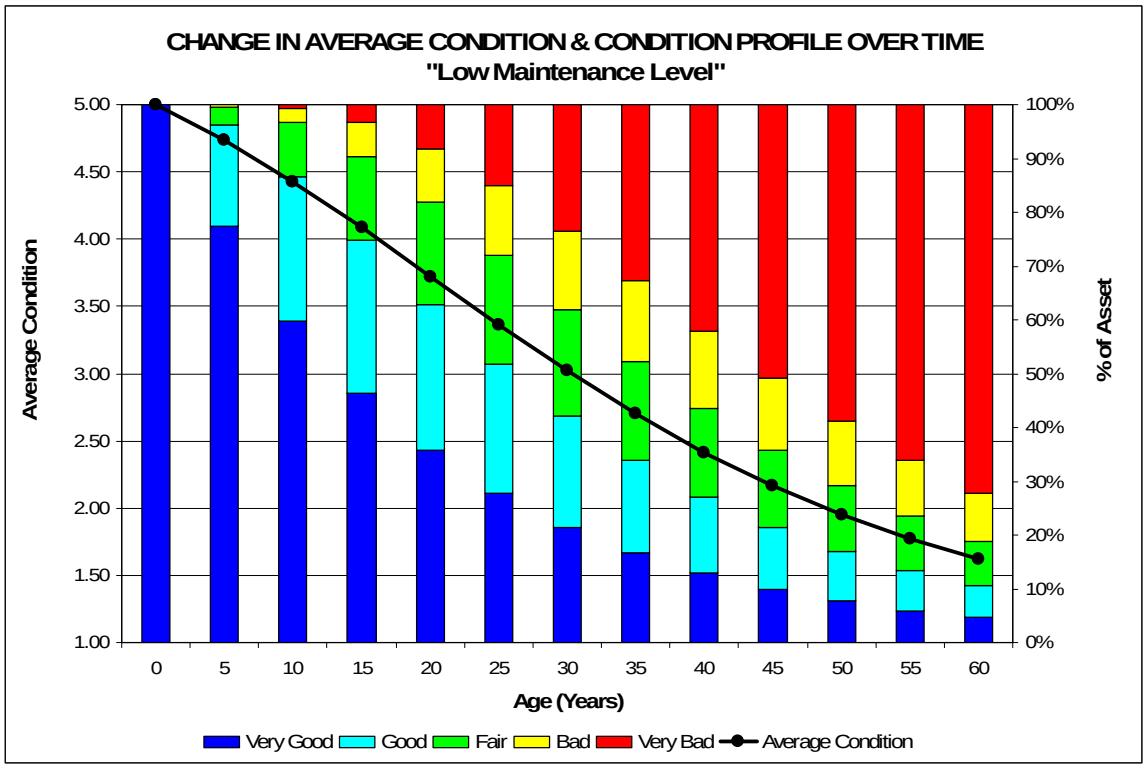


Figure 6: Change in Average Condition and Condition Profile over time

Please refer to Annexure B for examples of Condition-based Immovable Asset Preservation Budgets based on condition assessments.

In Figure 5 above “backlog maintenance” is defined as all repairs, rehabilitation (including refurbishments and renovations) and replacements. Due to the degradation process and maintenance (preservation) regimes it is normal for “backlog maintenance” to develop as immovable assets age. It is however important to manage this backlog within acceptable norms as shown in Figure 7 below. When the “backlog maintenance” has reached 60% of the asset replacement value it becomes more viable to replace the asset rather than repair or rehabilitate.

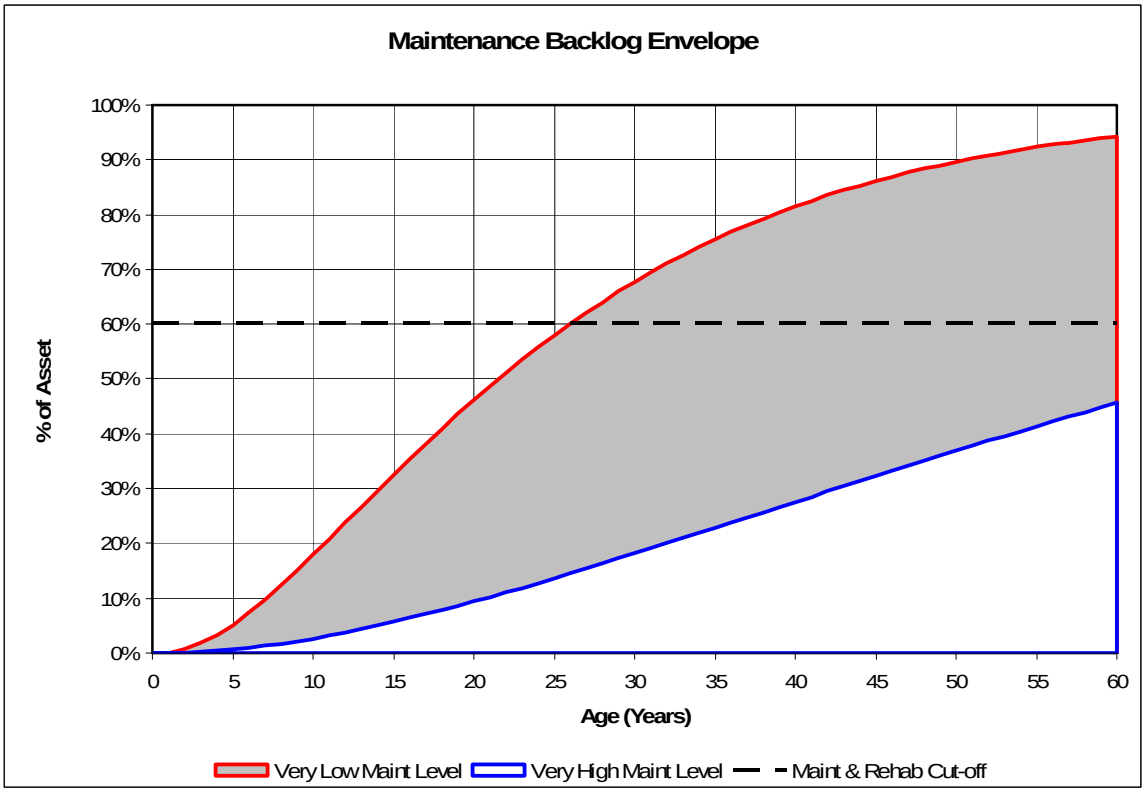


Figure 7: Maintenance Backlog Envelope

The above illustrations are based on state-of-the-art technology developed by Built Care that is at the forefront of international best practice. This technology, which enables the prediction of condition changes, makes it possible to determine the consequences of maintenance (preservation) strategies and could be made available to assist in the implementation of the GIAMB.

Figure 8 and Figure 9 shown graphs of condition assessment results of a set of six academic hospitals in South Africa. For an academic hospital the maintenance level should be high (rating of 4 on 5 point rating system, with 5 highest). The graph in Figure 8 indicates that most of the hospitals are under-maintained. In Figure 9 the reaction to the condition assessments, which started with the 1995 National Health Audit by the CSIR, is illustrated. In the case of Hospital A nothing was done since the 1995 audit and only nine years later this hospital, now 30 years in use, has reached the point where it is no longer financially viable to rehabilitate this facility. In the case of hospitals B, D, E and F the provincial health departments reacted and turned the downward trend around. This clearly illustrates the benefits of regular and consistent condition assessments.

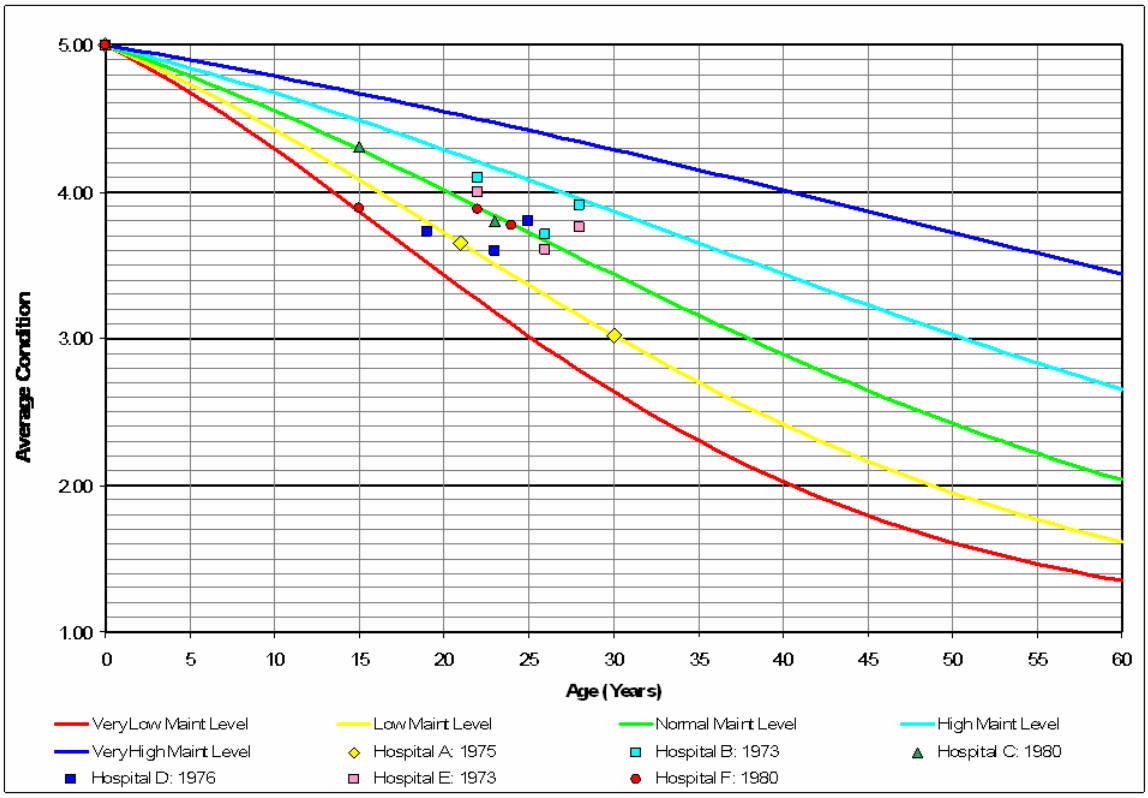


Figure 8: Condition Assessment Results of Set of Academic Hospitals in SA

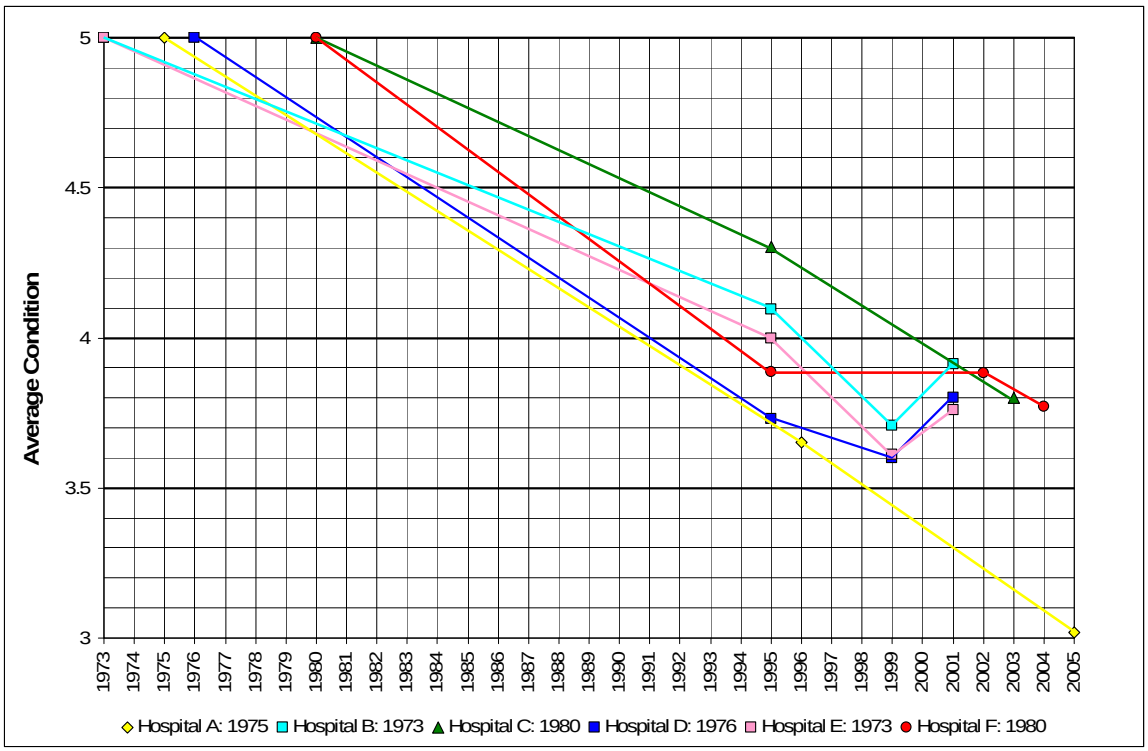


Figure 9: Condition Assessment Results of Set of Academic Hospitals in SA

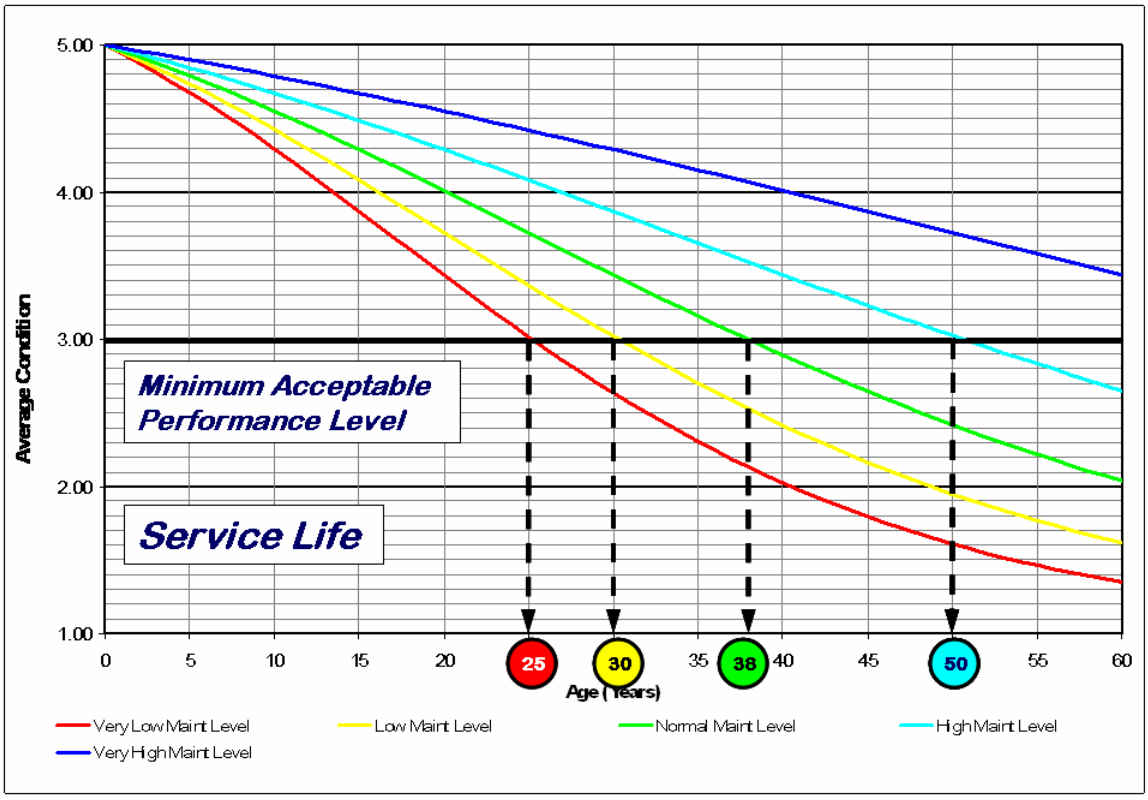


Figure 10: Service Life vs Minimum Performance Level vs Maintenance Level

In Figure 10 above the use of the technology to determine an appropriate maintenance level for an immovable asset to optimise the asset's service life is illustrated.

Norms for Maintenance Budget Allowance as % of Replacement Cost

There is a general misconception about appropriate maintenance (preservation) budget allowances. The following tables provide a rough guide and illustrates the importance of consistent and uniform condition assessment ratings and evaluations.

National norm (?) – 2% – 3%±
Only applicable if facilities are in a ***Very Good*** condition & Preventative Maintenance is done!

International norm – 4%±
Only applicable if condition is ***Good*** & ***regular*** maintenance is done!

Condition	Budget Req'd as % of Replacement Cost	Preservation Type Required
Very Good	2 - 3%	Preventative Maintenance
Good	4 - 6%	Condition-based Maintenance
Fair	20 - 30%	Major repairs
Bad	50 - 60%	Rehabilitation
Very Bad	100 - 110%	Replacement

Table 2: Indicative Maintenance Budget Allowances

Condition	Provision for Unplanned Maintenance if Maintenance is deferred
Very Good	1% ±
Good	2% ±
Fair	4% ±
Bad	8% ±
Very Bad	15% ±

Table 3: Provision for Unplanned Maintenance if Preservation is deferred

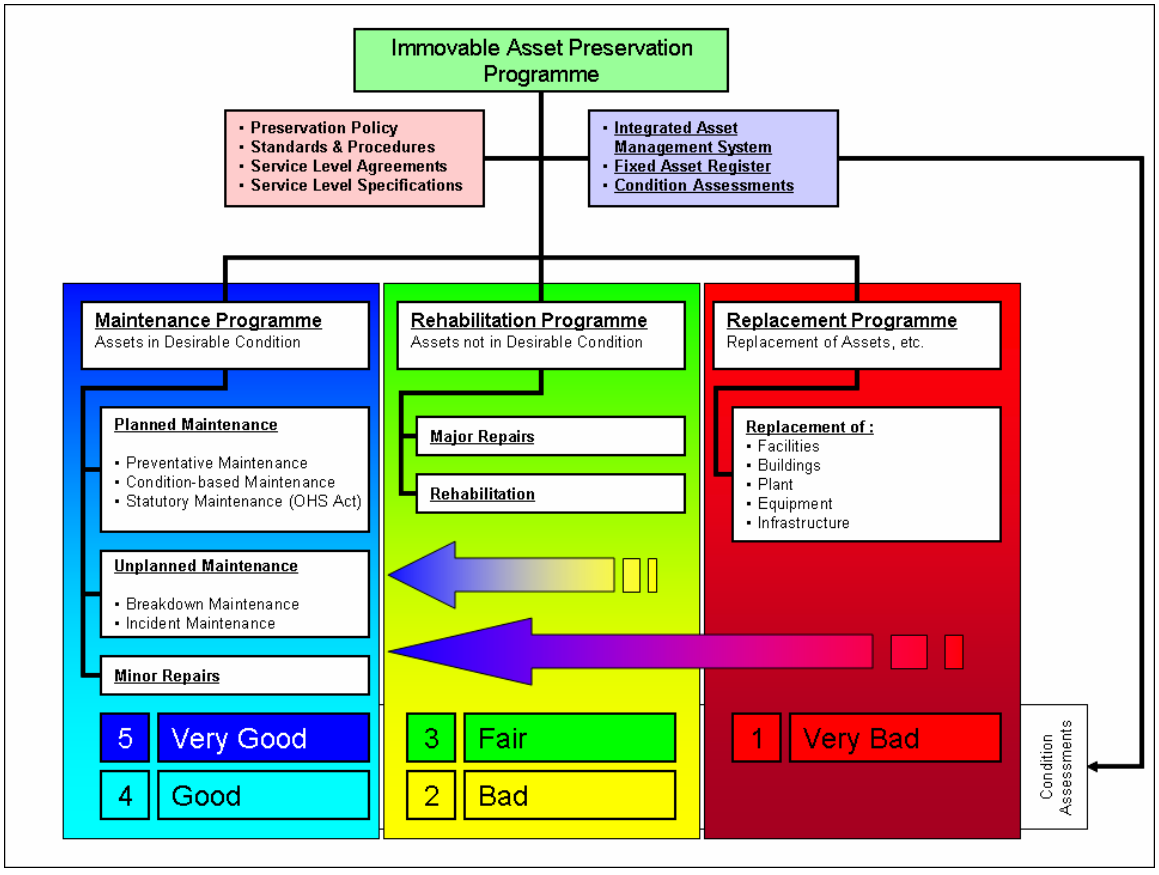


Figure 11: Immovable Asset Preservation Programme Flow Diagram

Figure 11 above is a graphic illustration of an Immovable Asset Preservation Programme with planned preventative maintenance as its main objective. It provides for three separate preservation programmes with separate budgets to prevent maintenance funds being used for rehabilitation or replacements or other non-maintenance related activities.

REFERENCES:

1. Hövde, P.J., and Moser, K., 2004. State of the Art Reports, CIB W080 / RILEM 175-SLM *Service Life Methodologies Prediction of Service Life for Buildings and Components*, CIB Report, Publication 294, March 2004. International Council for Research and Innovation in Building and Construction.

2. International Organization for Standardization, 2000. *ISO 15686-1, Buildings and constructed assets - Service life planning - Part 1: General principles*, Geneva, Switzerland: International Organization for Standardization.

3. Jernberg, P., Lacasse, M. A., Haagenrud, S. E., and Sjöström, C., 2004. Guide and Bibliography to Service Life and Durability Research for Building Materials and Components, Joint CIB W80 / RILEM TC 140 – TSL Committee on Service Life of Building Materials and Components, CIB Report, Publication 295. March 2004. International Council for Research and Innovation in Building and Construction.

4. Mc Duling, J.J., 2005. Towards the Development of Transition Probability Matrices in the Markovian Model for the Predicted Service Life of Buildings, PhD Thesis, Department of Civil and Biosystems Engineering, Faculty of Engineering, Built Environment and Information Technology, University of Pretoria, South Africa.

ANNEXURE A

RELEVANT EXPERIENCE OF BUILT CARE TEAM MEMBERS IN IMMOVABLE ASSET MAINTENANCE AND MANAGEMENT

1. Limpopo Department of Education: Implementation of an Immovable Asset Management Programme and Condition Assessments of Education Facilities (2005/07)
2. Kwazulu-Natal Department of Public Works: Implementation of an Immovable Asset Management Programme (2005/07)
3. Limpopo Department of Health and Social Development: Development and Implementation of Health Facilities Preservation and Maintenance Programme, policy development and condition assessments (2005/08)
4. Western Cape Departments of Health and Public Works: Phase 1 - An Assessment of Tygerberg Hospital with a view towards its Redevelopment, Phase 2 – Preparation of Business Plan, (2005/06)
5. Kwazulu-Natal Department of Health: Implementation of an Immovable Asset Management Programme and Condition Assessments of Health Facilities (2005/07)
6. University of Johannesburg: Audit of the Infrastructure at RAU and TWR in preparation for merger to form University of Johannesburg, Rand Afrikaans University and Technikon Witwatersrand (2004)
7. Free State Department of Health: Implementation of Immovable Asset Maintenance and Management System and condition assessment of hospitals, (2003/6)
8. Eastern Cape Department of Health: Preparation of Planned Preventative Maintenance Schedules for the Maintenance of Buildings and Building Fabric, Contracts for Minor Maintenance Work, Contracts for Maintenance Supplies, Maintenance Policies and Procedures, and condition assessments of hospitals (2003/06)
9. Eastern Cape Department of Roads and Public Works: Strategic Property Partner (PHASE 1 - Scoping Study) (2003/04)
10. Limpopo Department of Public Works: Infrastructure and Maintenance Backlog Verification, (2003)
11. Gauteng Department of Education: Development and Implementation of a School Maintenance Programme, (2003 – 2006)
12. Gauteng Department of Health: Facility and Maintenance Management Training of Facility Management Units at all Hospitals and Regional Office, (2001 - 2003)
13. Namibia Ministry of Health and Social Services: Situation Analysis and Writing of a Policy Document for the Management and Maintenance of Health Facilities, (2001/02)
14. Gauteng Department of Public Transport, Roads & Works: Maintenance Audit of all Gauteng Hospitals and Preparation of Maintenance Budget Reports, (2001)
15. Gauteng Department of Public Transport, Roads & Works: Implementation of a Building Maintenance Management System and the Development of a Fixed Asset Register of Provincially Owned Properties, (2000 - 2002)
16. North-West Department of Transport, Roads & Public Works: Development of an Immovable Asset Register and condition assessments, (1998 - 2002),
17. Northern Cape Department of Public Works: Development of an Asset Register of Provincially Owned Properties, including condition assessments, (1998 - 2002)

18. North-West Department of Transport, Roads & Public Works: Development of a Building Maintenance Management System and Program, (1997 - 1999)
19. Northern Cape Department of Public Works: Development of a Building Maintenance Management System and Program, (1996 - 1998)

CURRICULUM VITAE OF KEY TEAM MEMBER

Dr Johann Mc Duling, a registered professional engineer, obtained the degrees B.Eng.(Civil Eng.), B.Eng.(Hons)(Structural Eng.), M.Eng.(Structural Eng.) and a PhD (Civil Engineering) from the University of Pretoria. As consulting engineer he specialises in building maintenance management and works closely with the CSIR in research and development of new technology. He delivered several technical papers on maintenance at conferences in South Africa, Europe and Australia. He is also an extraordinary lecturer in facilities and maintenance management at the University of Pretoria and the University of the Free State.

PhD (Civil Engineering) Thesis:

Towards the Development of Transition Probability Matrices in the Markovian Model for the Predicted Service Life of Buildings

Since the 1992 UN conference in Rio de Janeiro on sustainable development, the international focus on research in the built environment has shifted to durability and sustainability issues, particularly development of Service Life Prediction methods. The candidate developed a model, based on the Markov Chain approach, to predict service life, condition changes over time, and consequences of maintenance levels on service life of buildings. The model translates expert knowledge and reasoning into probability values through the application of Fuzzy Logic Artificial Intelligence to supplement limited historical performance data on degradation of building materials for the development of transitional probability matrices for the Markov Chain.

ANNEXURE B

Examples of Condition-based Immovable Asset Preservation Budgets

SIYAZAMA SECONDARY SCHOOL

ZN05869

PRIORITISED MAINTENANCE BUDGET FOR FINANCIAL YEAR 2004/05

Building Number	Name of Building	Element Group	Estimated Current Construction Cost (Aug 2004)	Weighted Average Condition	Condition 5 "As New"	Condition 4 "Maintain"	Condition 3 "Repair"	Condition 2 "Rehabilitate"	Condition 1 "Replace"	MAINTENANCE BUDGET	REHABILITATION BUDGET	REPLACEMENT BUDGET	PRESERVATION BUDGET	CUMULATIVE PRESERVATION BUDGET	Suitability	Cause/ Reason	Risk Rating	Technical Priority
SITE		SITE ELECTRICAL: Services: Area lighting	R 3,445	2.80	0	60	0	0	40	R 110	R 0	R 1,516	R 1,626	R 1,626	3	T	1.83	1
B002	ABLUTION	BUILDING FABRIC: Roofs: Covering: Sheet metal/ PVC	R 14,057	3.35	0	65	20	0	15	R 348	R 422	R 2,319	R 3,089	R 4,715	4	N	1.83	2
B003	HALL/CLASSROOMS	BUILDING FABRIC: Roofs: Covering: Sheet metal/ PVC	R 95,130	4.00	0	100	0	0	0	R 2,854	R 0	R 0	R 2,854	R 7,569	4	N	1.83	3
B004	CLASSROOMS	BUILDING FABRIC: Roofs: Covering: Sheet metal/ PVC	R 23,146	2.95	0	55	15	0	30	R 538	R 521	R 7,638	R 8,697	R 16,266	3	N	1.83	4
B001	CLASSROOMS	BUILDING FABRIC: Roofs: Covering: Sheet metal/ PVC	R 121,486	2.85	0	55	0	20	25	R 2,825	R 10,934	R 33,409	R 47,167	R 63,433	4	N	1.83	5
B005	CLASSROOMS	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 58,962	1.70	0	10	20	0	70	R 973	R 1,769	R 45,401	R 48,142	R 111,575	3	V	1.83	6
B006	CLASSROOM	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 79,569	1.70	0	10	20	0	70	R 1,313	R 2,387	R 61,268	R 64,968	R 176,544	3	V	1.83	7
B005	CLASSROOMS	BUILDING ELECTRICAL: Services: Lighting	R 36,712	2.80	0	60	0	0	40	R 881	R 0	R 16,153	R 17,034	R 193,578	3	T	1.83	8
B006	CLASSROOM	BUILDING ELECTRICAL: Services: Lighting	R 54,919	2.80	0	60	0	0	40	R 1,318	R 0	R 24,164	R 25,482	R 219,060	4	T	1.83	9
B005	CLASSROOMS	BUILDING ELECTRICAL: Services: Power distribution	R 28,240	2.80	0	60	0	0	40	R 678	R 0	R 12,426	R 13,103	R 232,164	3	T	1.83	10
B006	CLASSROOM	BUILDING ELECTRICAL: Services: Power distribution	R 42,245	2.80	0	60	0	0	40	R 1,014	R 0	R 18,588	R 19,602	R 251,765	4	T	1.83	11
B004	CLASSROOMS	BUILDING FABRIC: Walls and wall finishes: External walls and wall finishes: Plastered brick/ block	R 29,902	3.75	0	75	25	0	0	R 785	R 1,121	R 0	R 1,906	R 253,671	4	N	2.17	12
B002	ABLUTION	BUILDING FABRIC: Walls and wall finishes: External walls and wall finishes: Plastered brick/ block	R 18,161	3.60	0	80	0	20	0	R 490	R 1,634	R 0	R 2,125	R 255,796	4	N	2.17	13
B003	HALL/CLASSROOMS	BUILDING FABRIC: Windows	R 32,370	3.25	0	70	0	15	15	R 825	R 2,185	R 5,341	R 8,351	R 322,904	4	V	2.33	23
B001	CLASSROOMS	BUILDING FABRIC: Windows	R 41,338	1.30	0	0	0	30	70	R 620	R 5,581	R 31,831	R 38,031	R 360,935	2	V	2.33	24
B002	ABLUTION	BUILDING FABRIC: Plumbing	R 5,537	3.00	0	60	10	0	30	R 133	R 83	R 1,827	R 2,043	R 362,978	2	N	2.33	25
B002	ABLUTION	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 10,253	1.00	0	0	0	0	100	R 154	R 0	R 11,278	R 11,432	R 374,410	3	V	2.33	26
B004	CLASSROOMS	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 16,882	1.00	0	0	0	0	100	R 253	R 0	R 18,570	R 18,823	R 393,234	3	V	2.33	27
B003	HALL/CLASSROOMS	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 69,386	3.00	0	40	40	0	20	R 1,457	R 4,163	R 15,265	R 20,885	R 414,119	3	V	2.33	28
B001	CLASSROOMS	BUILDING FABRIC: Sundry items: Fixtures and fittings	R 88,610	1.00	0	0	0	0	100	R 1,329	R 0	R 97,471	R 98,800	R 512,919	3	V	2.33	29
B003	HALL/CLASSROOMS	BUILDING ELECTRICAL: Services: Power distribution	R 20,602	1.00	0	0	0	0	100	R 309	R 0	R 22,662	R 22,971	R 643,680	3	V	2.33	34
B001	CLASSROOMS	BUILDING ELECTRICAL: Services: Power distribution	R 42,440	1.00	0	0	0	0	100	R 637	R 0	R 46,684	R 47,321	R 691,001	2	V	2.33	35
SITE		SITE WORKS: site fencing and gates: Domestic	R 27,252	3.90	0	90	10	0	0	R 1,036	R 545	R 0	R 1,581	R 692,581	3	V	2.83	36
B002	ABLUTION	BUILDING FABRIC: Doors: Internal doors	R 9,882	4.00	0	100	0	0	0	R 296	R 0	R 0	R 296	R 692,878	3	N	2.83	37
B001	CLASSROOMS	BUILDING FABRIC: Floors and floor finishes: Internal floors and floor finishes	R 128,684	3.70	0	70	30	0	0	R 3,281	R 5,791	R 0	R 9,072	R 746,385	4	N	3.50	64
B006	CLASSROOM	BUILDING FABRIC: Windows	R 37,121	3.90	0	90	10	0	0	R 1,058	R 557	R 0	R 1,615	R 748,000	4	N	3.50	65
B005	CLASSROOMS	BUILDING FABRIC: Windows	R 27,507	3.50	0	80	0	10	10	R 743	R 1,238	R 3,026	R 5,006	R 753,006	4	V	3.50	66
B007	ABLUTION	BUILDING FABRIC: Plumbing	R 1,214	4.00	0	100	0	0	0	R 36	R 0	R 0	R 36	R 758,816	4	N	3.50	70
TOTAL FACILITY			R 3,012,937	3.32	0	70.41	9.20	1.88	18.51	R 78,089	R 67,207	R 613,521	R 758,816		3.67		2.79	

SIYAZAMA SECONDARY SCHOOL — ZN05869
CONSOLIDATED MAINTENANCE BUDGET FOR FINANCIAL YEAR 2004/05

Building Number	Name of Building	Estimated Current Construction Cost (Aug 2004)	Area (m^2)	Weighted Average Condition	Condition 5 "As New"	Condition 4 "Maintain"	Condition 3 "Repair"	Condition 2 "Rehabilitate"	Condition 1 "Replace"	MAINTENANCE BUDGET	PLANNED MAINTENANCE	Preventative Maintenance	Condition Based Maintenance	UNPLANNED MAINTENANCE	REHABILITATION BUDGET	Repairs	Rehabilitation	REPLACEMENT BUDGET	PRESERVATION BUDGET	Suitability	Risk Rating
B001	CLASSROOMS	R 812,619	424.4	2.78	0	47.66	15.25	4.52	32.57	R 17,999	R 13,936	R 8,126	R 5,810	R 4,063	R 35,103	R 18,588	R 16,514	R 291,161	R 344,262	3.50	2.45
B002	ABLUTION	R 91,152	36.0	3.39	0	73.67	6.96	3.98	15.38	R 2,375	R 1,919	R 912	R 1,007	R 456	R 2,586	R 951	R 1,634	R 15,425	R 20,386	3.66	2.51
B003	HALL/CLASSROOMS	R 504,421	206.0	3.42	0	70.82	14.37	0.96	13.85	R 12,924	R 10,402	R 5,044	R 5,358	R 2,522	R 13,058	R 10,873	R 2,185	R 76,855	R 102,838	3.77	2.48
B004	CLASSROOMS	R 125,916	64.0	2.80	0	44.14	23.57	0	32.30	R 2,722	R 2,093	R 1,259	R 834	R 630	R 4,452	R 4,452	R 0	R 44,733	R 51,907	3.25	2.48
B005	CLASSROOMS	R 540,725	282.4	3.53	0	81.48	2.97	2.13	13.42	R 14,720	R 12,016	R 5,407	R 6,609	R 2,704	R 7,582	R 2,411	R 5,171	R 79,810	R 102,112	3.75	3.09
B006	CLASSROOM	R 815,908	422.5	3.62	0	85.28	3.13	0	11.59	R 22,676	R 18,596	R 8,159	R 10,437	R 4,080	R 3,828	R 3,828	R 0	R 104,020	R 130,525	3.90	3.14
B007	ABLUTION	R 13,889	5.0	3.97	0	97.46	2.54	0	0	R 411	R 342	R 139	R 203	R 69	R 53	R 53	R 0	R 0	R 464	4.00	3.50
BUILDING ELECTRICAL OVERALL		R 321,830		1.91	0	30.22	0.00	0	69.78	R 6,286	R 4,677	R 3,218	R 1,459	R 1,609	R 0	R 0	R 0	R 247,017	R 253,303	2.95	2.08
BUILDING FABRIC OVERALL		R 2,582,800		3.46	0	74.34	10.62	2.19	12.85	R 67,541	R 54,627	R 25,828	R 28,799	R 12,914	R 66,662	R 41,157	R 25,505	R 364,988	R 499,191	3.80	2.86
BUILDING OVERALL		R 2,904,630	1,440.3	3.29	0	69.45	9.45	1.95	19.15	R 73,828	R 59,304	R 29,046	R 30,258	R 14,523	R 66,662	R 41,157	R 25,505	R 612,005	R 752,494	3.70	2.78
SITE ELECTRICAL OVERALL		R 3,445		2.80	0	60	0	0	40	R 110	R 84	R 43	R 41	R 26	R 0	R 0	R 0	R 1,516	R 1,626	3.00	1.83
SITE WORKS OVERALL		R 104,862		3.97	0	97.40	2.60	0	0	R 4,151	R 3,362	R 1,314	R 2,048	R 789	R 545	R 545	R 0	R 0	R 4,696	2.92	3.33
SITE OVERALL		R 108,307	28,542	3.94	0	96.21	2.52	0	1.27	R 4,262	R 3,446	R 1,357	R 2,090	R 815	R 545	R 545	R 0	R 1,516	R 6,322	2.92	3.28
TOTAL FACILITY		R 3,012,937		3.32	0	70.41	9.20	1.88	18.51	R 78,089	R 62,751	R 30,403	R 32,348	R 15,338	R 67,207	R 41,702	R 25,505	R 613,521	R 758,816	3.67	2.79

SIYAZAMA SECONDARY SCHOOL

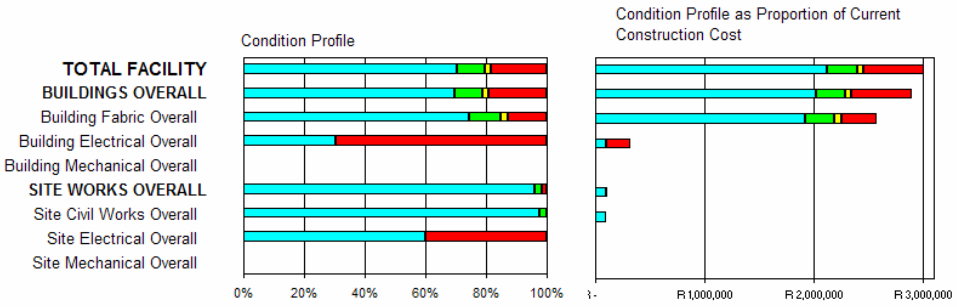
EMIS No 270507 **ZN05869**

Estimated Current Construction Cost **R 3,012,937**

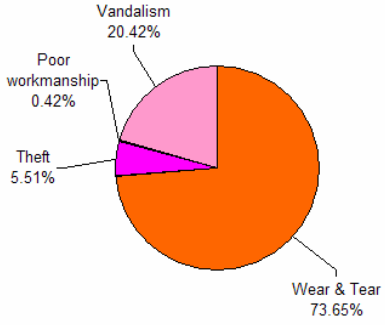
MAINTENANCE PROGRAMME	Current FY	Previous FY	Actual Prev FY
PLANNED MAINTENANCE	R 62,751	R 51,370	R 0
Preventative Maintenance	R 30,403	R 24,873	R 0
Condition Based Maintenance	R 32,348	R 26,497	R 0
UNPLANNED MAINTENANCE	R 15,338	R 12,748	R 56,190
TOTAL MAINTENANCE BUDGET	**R 78,089**	R 64,118	R 56,190
REHABILITATION PROGRAMME (Maintenance Backlog) (Capital Expenditure)			
Repairs	R 41,702	R 31,530	R 45,200
Rehabilitation	R 25,505	R 20,481	R 32,684
TOTAL REHABILITATION BUDGET	**R 67,207**	R 52,011	R 77,884
REPLACEMENT PROGRAMME (Capital Expenditure)			
TOTAL REPLACEMENT BUDGET	**R 613,521**	R 225,823	R 13,852
PRESERVATION PROGRAMME			
TOTAL PRESERVATION BUDGET	**R 758,816**	R 341,952	R 147,926

Coordinates	Latitude -29.62472			Land ownership	Trust land
	Longitude 29.89002			Building ownership	Government
School Type	SECONDARY	Number of Classrooms	20	Former Department	KwaZulu
Number of Buildings	7	Number of Learners	700	Physical Address:	GOMANE,
Total Floor Area (m^2)	1,440	Region	PIETERMARITZBURG		IMPENDLE
Total Site Area (m^2)	28,542	District	VULINDLELA	Telephone No	033 - 9968102/8159
Site coverage (%)	5.0%	Circuit	IMPENDLE		

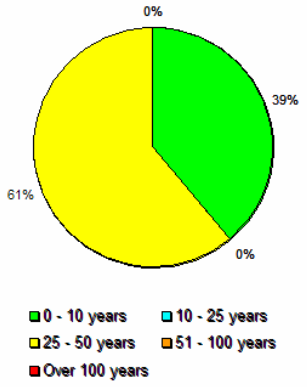
	Estimated Current Construction Cost	% of Total Facility	Condition Profile: Very Good 5	Good 4	Fair 3	Bad 2	Very Bad 1	Average Condition: Current Financial Year	Previous Financial Year	Suitability Profile	Risk Profile
TOTAL FACILITY	R 3,012,937	100%	0.0	70.4	9.2	1.9	18.5	3.31	3.65	3.67	2.79
BUILDINGS OVERALL	R 2,904,630	96.4%	0.0	69.4	9.4	2.0	19.2	3.29	3.63	3.70	2.78
Building Fabric Overall	R 2,582,800	85.7%	0.0	74.3	10.6	2.2	12.8	3.46	3.78	3.80	2.86
Building Electrical Overall	R 321,830	10.7%	0.0	30.2	0.0	0.0	69.8	1.91	2.40	2.95	2.08
Building Mechanical Overall	R -	0.0%	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
SITE WORKS OVERALL	R 108,307	3.6%	0.0	96.0	2.5	0.0	1.5	3.93	4.20	2.92	3.27
Site Civil Works Overall	R 104,862	3.5%	0.0	97.4	2.6	0.0	0.0	3.97	4.23	2.92	3.33
Site Electrical Overall	R 3,445	0.1%	0.0	60.0	0.0	0.0	40.0	2.80	3.17	3.00	1.83
Site Mechanical Overall	R -	0.0%	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00



Cause/ Reason for Maintenance



Average Age of Buildings



KwaZulu Natal Department of Education

EXECUTIVE SUMMARY

Most recent update 28 Aug 2004
Primary assessment date 17 Aug 2004

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