Maintenance Planning [MPlan™] and Asset Condition Assessment

The tool to assist Local Government Asset Management to readily accommodate Total Asset Management legislative requirements:

- LGA:1993 Sect.428 requires among other things, the following to be included in Council's Annual Report:

  (1) Within 5 months after the end of each year, a council must prepare a report as to its achievements with respect to the objectives and performance targets set out in its management plan for that year.

  (d) a report on the condition of the public works (including **public buildings**, public roads and water, sewerage and drainage works) under the control of the council as at the end of that year, together with:

  (i) an estimate (at current values) of the amount of **money required to bring the works up to a satisfactory standard**, and

  (ii) an estimate (at current values) of the **annual expense of maintaining** the works at that standard, and

  (iii) the council's **program of maintenance for that year** in respect of the works,

  As can be clearly seen, there is a legislative requirement to develop a maintenance plan that addresses these requirements. **MPlan™ has been developed for that purpose** and Council's such as Cambelltown, Penrith and Blue Mountains are wondering how they would have managed without it.

The service for assessing the condition of buildings, plant and equipment as well as maintenance management practices. Using a combination of techniques, software tools, technical and management expertise NDIBS can forecast the future for Asset and Facilities Management.

NDIBS understand the complexities that building owners and managers face, **NDIBS'** alliance partner "WebFM" have developed a system which provides predictive modeling and maintenance planning allowing life cycle asset plans for 1 year, 5 years or to 50 years and beyond.
The benefits

- Definition of the level of maintenance that you require.
- The development of an accurate asset register database.
- An accurate assessment of the physical condition of your asset.
- A prioritised list of repairs based on criticality.
- A detailed report showing estimated costs or repairs and repair urgency.
- Forecast the impacts of new or strategic capital works.
- Forecast priority funding.

Who can benefit?

- Landlords and tenants
- Any organisation buying, selling or considering buying or selling a substantial facility or property asset.
- Any organisation who wishes to budget for the ongoing cost of asset care.
- Any organisation whose business depends upon a substantial asset base.
- Any organisation which must provide future maintenance planning projections.
- Any organisation which must provide future maintenance planning projections.
- Government Organisations wishing to fulfill Total Asset Management (TAM) Requirements
  - such as NSW LGA:1993 Sect.428. and similar requirements in other States
  - Australian Government Auditor General TAM policy

What is MPlan™?

- A simple yet powerful computer based tool to assist asset and facilities managers develop their forward maintenance and lifecycle asset plans for 1, 5 and/or 50 years.
- It bridges the gap between the asset register and the work management systems. It allows development of forward cashflows and options for your asset maintenance and replacement programs.
- Is a system that has successfully provided maintenance plans for Local, State and Federal Government Agencies as well as Private Sector Trusts and Major Companies.
- Is a simple approach saving you time to develop a maintenance plan and more importantly, can show you and your organisation the right amount of funding for the right reasons.
- Uses pre-developed maintenance standards to develop plans that reflect your total and strategic asset management requirements.
- Shows the impact of new or strategic capital works in budget models.
- Use it to define priority-funding requirements and improve the use of scarce funds.
- Can update the status of the plan at the click of a button.
- Can easily reflect changes by updating data.
- Allows creation of your maintenance plan from the title page to detailed works schedules.
- Can develop periodic/routine maintenance budgets for each facility.
- Can keep all the condition survey and budget costs up to date with the simple CPI increase function.

NDIBS can provide accredited staff to conduct assessments or we can arrange in-house staff to be trained to develop plans using the unique 7-step methodology.

NDIBS will assist with the Delivery Strategy by helping you determine the strategy that you need to deliver your plan and reflecting your unique maintenance needs for the asset.

MPlan™ will assist with Priority~Allocation issues and present this in graphical format.

What the customers say –

"best investment we've ever made"
"it's great, we're actually seeing pain on walls"
"we doubled our funding levels"
"our staff have taken ownership of the Plan"

- Used to provide planning for over $4 Billion in assets to date.
- Uses real buildings and budgets for model comparatives
- Developed with over 10 years experience
- Produces maintenance plans that work
- Allows you to get the right level of funding to achieve the standards demanded

If you have any further queries about this or any other aspect of Building Services, please contact me or visit our website.

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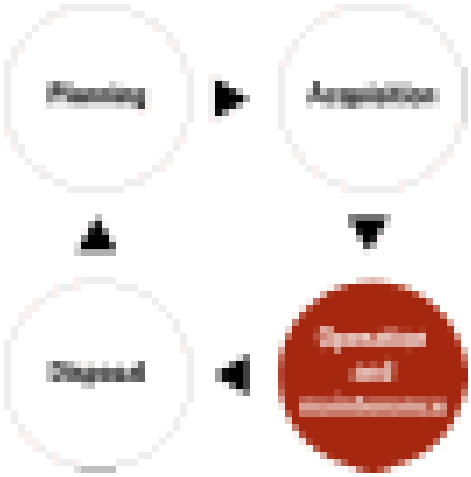
MAINTENANCE STRATEGIES

Maintenance Categories



Introduction

These categories define a desired condition of facilities with respect to visual appearance, functionality, economic performance and legal compliance. They are outcome oriented and do not themselves dictate maintenance or cleaning tasks or budgets. Maintenance categories influence planning, and establish quality and presentation levels which maintenance service providers are required to achieve.

The categories are defined at five levels, each referring to a category that may be allocated to individual facilities or parts of a facility. The five levels are:

Category Standard of Maintenance

A Exceptional

B High

C Standard

D Minimal

E Mothball

Areas or facilities may be allotted various categories at different points of their life cycle. As examples, the category of some facilities may be raised by one level for the period of a special event or function, or reduced for a time prior to sale or demolition.

Aims and usage

Maintenance categories are aimed at avoiding confusion and uncertainty about the overall level of condition to which a facility or part of a facility is to be maintained.

The categories enable the development of maintenance policies and practices to be negotiated and agreed between landlord and tenant, or owner and service provider.

They can then be used to:

set the type and frequency of cyclic maintenance and inspections define acceptable threshold levels of performance and presentation fix acceptable standards of workmanship, appearance and cleanliness establish acceptable response times for the correction of faults define performance criteria for maintenance or cleaning contracts.

The following pages describe the characteristics of each category.

Category A - Exceptional

Characteristics:

In such areas the requirement is to preserve the facility in "as new" condition continuously and indefinitely, and to correct unacceptable conditions swiftly and unobtrusively.

Examples:

Prestige areas with symbolic significance or with critically important functional needs. Examples include Parliament Houses (public areas, the chambers, and ministerial accommodation), hospital operating theatres, prestige golf courses, overseas embassies, and the public areas of galleries, museums and other similar institutions.

Industrial process plants where failures incur high cost or safety penalties (such as aluminium smelters or sewage pumping stations) also fit this category, although in such cases the "as new" criteria for visual appearance may be relaxed.

Performance Criteria:

Visual appearance	As new, or highest quality reasonably achievable.
Function	All elements must function as intended at all times, with no down time tolerated during periods of intended use.
Legal	All legal responsibilities must be met.
Financial	Financial and economic criteria are not primary considerations in planning maintenance programs for buildings of this type.

Maximum efficiency of maintenance operations is required, to minimise expenditure in achieving the desired outcomes.

Planning implications:

A very high proportion of maintenance in such areas must be undertaken on a pre-planned, regular basis. So far as possible inspections and maintenance tasks must be scheduled outside normal working hours or when the facility is not in use.

A rapid response capability must be available to respond to any failures which occur when the facility is in use, and on a round the clock basis if required. All essential spares must be kept in inventory or readily available at short notice elsewhere.

Planned redundancy or duplication of items may be appropriate. Comprehensive and regular inspections are carried out frequently and all existing or incipient defects rectified promptly.

Facilities in this category typically contain unusual special purpose finishes, structures and plant materials (marble cladding, tiling, integral sculptures, special paints, timbers or transplanted mature plant material) and may have to comply with heritage or other conservation criteria. Maintenance work orders must be fully detailed and include all necessary work practices and materials. Full reference manuals and instructions must be kept available for ready reference.

Category B - High

Characteristics:

In such areas the requirement is to preserve the facility in good condition both visually and functionally, and to respond promptly in the event of failures.

Examples:

Areas with public significance or commercial importance including reception areas and foyers of premises occupied by large organisations, board rooms, executive offices, hotels above three star, banking chambers, some retail stores such as jewellers and the fashion areas of department stores. Some industrial facilities also fit this category where cost or safety penalties may be incurred, with the visual appearance criteria relaxed.

Performance Criteria:

Visual appearance	Minor signs of deterioration when viewed closely may be acceptable. No deterioration when viewed from normal distance. Some deterioration may be tolerated for short periods of time.
Function	All elements must function as intended during periods of intended use, with a low probability of failure.
Legal	All responsibilities should be met.
Financial	The primary aim in this category is to maximise the long term economic performance of the facility. Refurbishments, equipment replacements and maintenance planning should be in a strategic framework, and decisions taken on a life-cycle basis.

Planning implications:

A high proportion of maintenance should be undertaken on a cyclic basis, in order to reduce failures and maintain an adequate level of functionality and appearance. Cleaning, inspections and maintenance tasks should be planned in conjunction with the user to minimise disruption, but some interruptions to service can be tolerated.

A call out capability must be available when the facility is in use, in order to respond to failures reported by users. Unusual items should be kept in inventory, but some delays and certain substitutions may be acceptable. Inspections should be carried out regularly and defects rectified as soon as possible.

Category C - Standard

Characteristics:

This category is the "default" category which should apply if no special conditions are present. It is aimed at preserving essential functionality, complying with statutory health, safety and environmental obligations, and rectifying faults before consequential damage incurs additional cost.

In such cases the requirement is to preserve the operational capacity of the facility as much as possible. This category does not in itself require close attention to physical appearance except in so far as it is desirable in order to meet the other criteria.

Examples:

This category applies to most areas which are in use for public or private purposes and to which no special conditions apply. Examples include administrative office accommodation for business organisations or Government, the operational areas of manufacturing operations, most areas of universities, schools and gaols, and the non-public sections of transport terminals.

Performance Criteria:

Visual appearance	In this category physical appearance is not the major consideration and some minor signs of deterioration when viewed from normal distance are acceptable.
Function	All required elements should function as intended during periods of intended use. Minor failures, excluding those which bring a threat to safety or security, can be tolerated.
Legal	All requirements with respect to health, safety and the environment must be met. Other responsibilities should be achieved to the maximum extent feasible.
Financial	The primary aim in this category is to maximise the long term economic performance of the facility. Refurbishments, equipment replacements and maintenance planning should be in a strategic framework, and decisions taken on a life-cycle basis.

Planning implications:

Some maintenance is undertaken on a cyclic basis, in order to reduce failures and maintain an adequate level of functionality. Inspections and maintenance tasks should be planned in conjunction with the user to minimise disruption, but interruptions to service are acceptable. A call out capability should be available in order to respond to emergency failures reported by users.

Category D - Minimal

Characteristics:

This category applies to facilities which have a limited life or are in use on an interim basis. Maintenance is aimed at minimising current operational costs whilst continuing to preserve essential functionality for operational purposes and complying with statutory obligations to the maximum extent possible. This category is normally applied where the expected remaining life of the facility is less than five years or where little use is expected.

Examples:

This category applies to facilities which are approaching the end of their life and for which vacation or disposal is planned, or areas that are rarely used. Examples might include buildings in an easement for a planned freeway, a school which is planned to be closed or replaced, or a commercial office building approaching refurbishment.

Performance Criteria:

Visual appearance	Some signs of deterioration are acceptable.
Function	All required elements should function as intended during periods of intended use. Minor failures will be tolerated except for security.
Legal	Legal responsibilities with respect to health, safety and the environment should be met.
Financial	Limitation of short term maintenance costs is the primary objective.

Planning implications:

Most maintenance in such areas is reactive, and planned to retain functionality for a limited period only. Cyclic maintenance is confined to specialist areas such as the maintenance of lifts and grass cutting, and at the minimum required to retain safety and compliance with regulations.

Category E - Mothball

Characteristics:

This category applies to facilities which have been closed or vacated, and are not in current use.

Maintenance is aimed at maintaining safety and security, protecting against vandalism or other damage, and limiting any cost penalties.

Examples:

Facilities which are held vacant awaiting sale, demolition, or a decision about their future. Examples in Sydney include Schofields Aerodrome (Sydney), etc.

Performance Criteria:

Visual appearance	Not important.
Function	No requirement to retain any functional performance except to avoid degradation of asset value.
Legal	Only essential responsibilities with respect to safety and the environment should be met.
Financial	In this category the limitation of maintenance costs in the short term is the primary objective.

Planning implications:

Maintenance in such areas is confined to regular patrols and inspections, with only essential works undertaken such as security of the site, the control of proclaimed noxious weeds or the removal of safety or fire hazards.

The 7 Step Maintenance Plan recommended by NDIBS

Step	Scope
1. List the Assets	Determine agreed asset descriptors, ensuring that asset items can be easily located and identified (self evident SiteID/ Location ID/ ServiceID/ Item ID)
2 Agree Maintenance Standards	Agree on the impact of the maintenance standards These are usually defined in the Services Agreements or by statutory legislation – Where available, the latest version of any maintenance standards defined in Australian Standards shall be used as the minimum acceptable: eg AS 1851:2005.
3. Assess Asset Condition	Undertake an assessment of all areas and all asset items.
4. Determine if/what work is required	Provide a detailed report (by exemption) to stakeholders sufficient to allow informed decisions of priorities for any remediation or upgrades
5. Plan Action and Forward Budgets	Record required works in the Works Management Database and ensure funding availability for the project time.
6. Determine the strategy for delivery	Provide a works brief / Tender/Allocate work. Obtain Certification/Commissioning Data on completion. Record details in Works Management Database.
7. Review	Assessor (from Step 3) to review works (possibly during next scheduled inspection).

Overview of the 7 step methodology

Step 1 List the Assets

This step is to assemble the list of facilities, location identifiers, service type designations and item numbers that are to be included in the asset plan. Also this step involves the development of a generic set of facility types to assist in the allocation of the maintenance standards policy: eg. HUR0100WHDP1 could be used to define: Hurstville, Building 1, Exterior (or room number), domestic hot water pump 1.

Step 2 Maintenance impacts and standards

This step involves firstly the agreement by the stakeholders of the maintenance category standard applicable to each generic facility type. This becomes the maintenance standards policy. The second part of this step is to identify the forecast impacts and the resulting maintenance standard applicable to each facility –

Category Standard of Maintenance

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Step 3 Condition assessment

This covers the conduct of the condition assessment. This consists of the “desk top” assessment using existing knowledge and available maintenance records and a full on-site assessment.

Step 4 Determine what works are required

Provide a detailed report (by exemption) to stakeholders sufficient to allow informed decisions of priorities for any remediation or upgrades

Step 5 Plan action and prepare funding

Record required works in the Works Management Database and ensure funding availability for the project time.

For those customers who take up MPlan™ option[1]. This can then provide forward estimates for maintenance and upgrades, including what-if analysis.

Step 6 Determine the strategy for delivery

This is the development of a strategy with the stakeholders, to undertake the maintenance program. It covers the current approach and any recommended improvements to ensure funds are spent effectively.

For items requiring remediation it includes the provision of a works brief (if appropriate), tendering, or allocation of work to incumbent contractors. Upon completion of any works it shall include: obtaining certification and commissioning data associated with these works and recording details in the Works Management Database

Liaise with stakeholders to define/determine future direction for assets.

Step 7 Review

This is the stated timetable to review the progress of the maintenance program and for MPlan™ customers, to update any changes to the overall asset plans that impact upon maintenance.

It is expected that the initial assessment shall be a comprehensive assessment of all building services equipment, the building fabric and perimeter grounds: ie. paths, roads, external lighting, perimeter fencing, etc.

It is expected that subsequent inspections shall report by exemption: updated concern, satisfactory completion of suggested works defined in previous assessment/review, or unsatisfactory works performed.

[1] *Includes additional costs for additional time and effort involved in assembly and compilation of the MPlan™ data and customer subscription to access the system.*