

# Maintenance

BS 3811 define 'maintenance' as: "The combination of all technical and associated administrative actions intended to retain an item in, or restore it to, a state in which it can perform its required function." The requirements for maintenance must not be less than those necessary to meet the relevant statutory requirements.

BS 3811 subdivides maintenance into 'planned' and 'unplanned' maintenance as illustrated in figure 1.

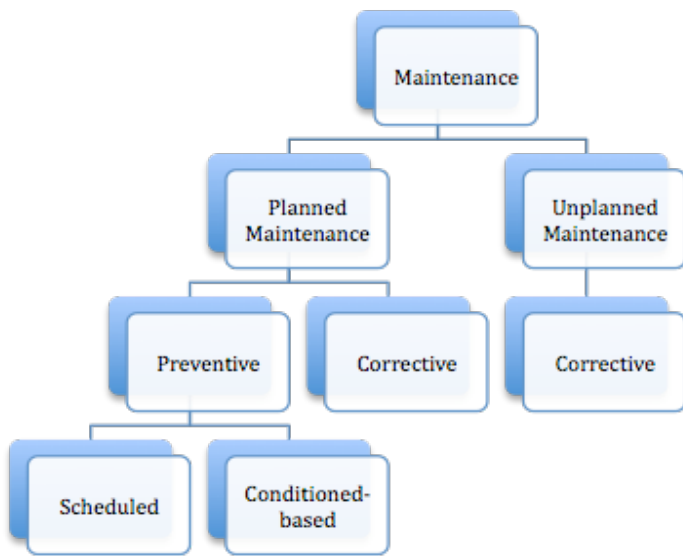


Figure 1. Type of maintenance (Source: BS 3811:1984)

## Corrective maintenance

Work necessary to bring a building to an acceptable standard (often as recommended by a conservation plan) such as treatment for rising damp; or

## Planned maintenance

Work to prevent failure which recurs predictably within the life of a building, such as cleaning gutters or painting; or

## Emergency corrective maintenance

work that must be initiated immediately for health, safety, security reasons or that may result in the rapid deterioration of the structure or fabric if not undertaken (for example, roof repairs after storm damage, graffiti removal or repairing broken glass). A daily response system detailing who is responsible for urgent repairs should be prepared.

In summary, maintenance is the routine, everyday work, which is necessary to protect the fabric of a building. When carried out on a planned basis, maintenance helps prevent the types of failure which occur predictably within the life of a building.

Maintenance falls into three main categories:

1. **Inspection** to assess the condition of a building, report any problems and decide whether repair or other work is necessary;
2. **Specific tasks** such as testing building services and clearing debris from gutters;
3. **Minor repairs** such as fixing slipped slates, replacing broken glass and making temporary 'flashband' repairs to leadwork.

Maintenance differs from repair, which is work carried out to put right defects, significant decay or damage, and work to return a building to a good condition on a long-term basis. You should **not** include repairs in your maintenance plan.

## Why have a maintenance plan?

The main reason for a maintenance plan is that it is the most cost-effective way to maintain the value of an asset. The advantages of a plan are:

- The property is organised and maintained in a systematic rather than ad-hoc way;
- Building services can be monitored to assist their efficient use;
- The standard and presentation of the property can be maintained;
- Subjective decision making and emergency corrective maintenance are minimised.

When buildings are neglected, defects can occur which may result in extensive and avoidable damage to the building fabric or equipment. Neglect of maintenance can also give rise to fire and safety hazards, which could result in building owners being found legally liable for any injuries.

## Identifying the maintenance tasks

Your maintenance plan, which must be prepared by your professional adviser, should contain the following information:

### Building element

You should identify each element of the building, including:

- roofs;
- rainwater disposal system, both above and below ground;
- external walls, including doors and windows;
- internal structure;
- building services.

### Maintenance tasks

List the maintenance tasks (inspection, specific tasks

and minor repairs) which are to be carried out to each element of the building.

### Frequency

Decide how frequently each maintenance task should be carried out. Frequency may depend on the condition of each building element, and could be:

- **occasional**, such as inspecting roof areas and rain-water goods during or after stormy weather;
- **regular**, for tasks carried out at least once a year, such as clearing rainwater goods every six months;
- **cyclical**, for tasks carried out less than once a year, such as testing the electrical installation every five years.

## Writing your maintenance Plan

To convert this information into a ten year maintenance plan you should allocate each of the **regular** tasks to an appropriate month (or months) of the year, taking into account who will be carrying out the task. For example:

- If you employ a contractor to clear the gutters every six months, this task should be carried out in spring and autumn, after the fall of blossom and leaves. Other tasks which your contractor carries out, such as inspecting and carrying out minor repairs to roof coverings, could be done at the same time.
- If the church deacons check for signs of beetle activity in May, then other nonskilled internal inspections, such as inspecting the internal structure for signs of structural movement, could also be carried out in May.

The **cyclical** tasks should be programmed over a ten-year period starting from the day you took possession of the building. This means that when calculating the year in which your maintenance plan should start, you will need to allow time for completion of all major projects.

To help you plan your future financial Commitments and fundraising needs, your conference treasurer maybe able to help in order that you obtain realistic budget estimates for the cost of implementing your maintenance plan over the ten-year period. You will need to bear in mind that realistic costs will have to take into account both safe working practices and means of access. You may find it helpful to present your maintenance plan in the form of a table, as illustrated on pages that follows. Please regard this as an example rather than a template, as the contents and format of your maintenance plan should be tailored to the particular needs of your church.

## Total asset management

For most government agencies, the maintenance plan forms part of a total asset management strategy. Total asset management is aimed at improving value for money from public sector assets.

Whether in public or private ownership, good management of heritage assets should include effective conservation planning aimed at retaining assets values, and effective maintenance programmes to direct money effectively and wisely.

### Recording the asset

As a building committee chairperson, deacon, Conference treasurer or manager, you need to know and record in detail what you are managing. Without this information you cannot decide on a maintenance policy or estimate your expenditure for a budget.

Basic information that a building manager needs to have includes:

- Plans, showing location of all elements, easements and construction details
- Age and condition of the building
- Services details
- Maintenance requirements
- names and contacts of those responsible for maintenance
- Dimensions and areas of accommodation
- Local council requirements
- Heritage listings
- Reports on the building, including a conservation management plan
- Details of previous conservation works.

The following tools can assist with the recording of information.

### Day log book or diary

The diary is for recording reported defects, injuries and daily expenses.

### Maintenance log book

This records all maintenance work carried out, including a description of the work, date of completion, estimated and actual cost, contractor and warranties. A cross-reference system should enable details of treatments such as fungicides, paint types and colours to be readily accessible in the future. As the log book includes the actual price for work done, it is a valuable source for future budgeting.

### Periodic inspection survey

All properties should be inspected at regular intervals to identify any deterioration and required maintenance work, including cleaning.

Records show the history of an item's condition, and are

a guide to likely future problems and costs. They indicate whether a property is being over- or under-maintained or misused, and can show if previous maintenance was inappropriate or if there are design or material defects.

All records should be readily available on site.

It could be advantageous to record the long-term performance of repair materials and procedures in order to assess their suitability for future maintenance work. Where there may be changes in maintenance personnel, the failure to keep detailed records could result in a repetition of previous mistakes. Taking photographs periodically to illustrate detrimental changes in the performance of the repair will often enhance the usefulness of written records.

## Preparing a budget

Annual budgeted expenditure on maintenance can be of three kinds:

**committed expenditure**, which includes tasks that occur every year as part of planned maintenance, such as maintenance contracts;

**variable expenditure**, which includes regular tasks within an overall program of planned maintenance that may not occur every year. The building manager exercises some discretion and decides on priorities for these tasks;

**managed expenditure**, which relates to unplanned maintenance works carried out entirely at the building manager's discretion –primarily emergency corrective maintenance.

The aim of a maintenance budget is to reduce managed expenditure over time as far as possible and replace it with variable expenditure. Regular inspections can help by identifying how components are performing and when they might fail.

Budgets need to include costs for inspections, replacement of materials or finishes, cleaning and any unforeseen breakdowns or repairs. Budgeting for these items will become more accurate over time if detailed records of maintenance expenditure are kept.

Budgets need a simple control system, with regular and frequent reports on actual and committed expenditure.

## Preparing a program

At least two levels of programming are required:

**long term maintenance**, up to and including the first painting cycle, which can extend to 50 years for a building with a slate roof or 100 years for a building with stonework;

**annual maintenance**, a schedule can be compiled by assessing the annual inspection survey, day log book or diary and work carried over from the previous year. The daily response system for carrying out urgent maintenance should

be upgraded annually. Invariably, the cost of all desirable works in any one year will exceed the budget. The building manager then has to decide what is necessary this year to maintain the asset within the funds available, and what could be carried forward to the following year.

## Inspecting your property

Regular inspections are basic to planned maintenance. They ensure continuing serviceability and economy of labour and materials.

Inspections should be carried out using standard forms to assist comparison with previous inspections. It is desirable to use the same people over a long period to aid continuity with maintenance assessment.

If carrying out inspections, you need to develop your skills in detecting the first signs of failure. Do not attempt to carry out work or inspections that may expose you or others to danger, and seek the help of relevant specialists if necessary.

There is no general rule on how often maintenance surveys need to be carried out. Frequency will be influenced by the rates of decay and deterioration of various building elements. One of the main purposes of a maintenance plan should be to provide guidance on this subject.

Clearly some elements may deteriorate more rapidly than others. For example, storm water drainage is likely to require inspections and attention at closer intervals than joint or roof repairs. When the maintenance plan is introduced it is sensible to err on the conservative side and carry out some inspections at shorter intervals, for example six or twelve months. Gradually, after background data has been collected, it may be found appropriate to extend the intervals between inspections and maintenance procedures of the various building elements.

While many defects can be easily seen, others may require instrument or laboratory testing for an early indication of rot or termite infestation in timber, dampness in walls, or decay beneath a painted surface.





# 1. Occasional and regular tasks

Ref	Building element	Maintenance task	Frequency	Annual cost £	J	F	M	A	M	J	J	A	S	O	N	D
<b>I.1 Roofs</b>																
I.1.1	Roof areas generally	Inspect roof areas from the ground and accessible high points and report any loss or damage to the roof coverings.	i. after stormy weather ii. annually	–						✓						
I.1.2	Slate and tile roofs and vertical cladding	Inspect for cracked, displaced and broken slates and tiles. Replace to match.	twice per year	£						✓						✓
I.1.3	Sheet metal roofs and cladding	Inspect condition of panels, joints and clips. Make temporary repairs to cracks and splits.	twice per year	£						✓						✓
I.1.4	Ridge tiles	Inspect bedding and jointing between ridge tiles. Re-bed and repoint as necessary.	annually	£						✓						
I.1.5	Lead weatherings and flashings	Inspect condition of lead flashings and weatherings. Make minor repairs e.g. dress back clips, make good mortar filllets.	annually	£						✓						
I.1.6	Asphalt roofs	Inspect condition of flat areas and upstands. Make temporary repairs to splits and holes.	twice per year	£						✓						✓
<b>I.2 Rainwater disposal</b>																
I.2.1	Rainwater goods generally	Inspect rainwater goods from the ground and accessible high points and report any loss or damage.	i. during/after stormy weather ii. annually	–						✓						
I.2.2	Rainwater goods	Clear rainwater goods of debris and ensure overflows are clear. Rod if necessary. Check that stainless steel guards are secure.	twice per year	£						✓						✓
I.2.3	Rainwater goods	Inspect rainwater goods for cracks and leaks. Repair or replace any cracked sections.	twice per year	£						✓						✓
I.2.4	Perimeter drainage channel	Clear drainage channel of vegetation and debris.	monthly, spring and summer	–						✓						✓
I.2.5	Perimeter drainage channel	Inspect drainage channel for cracks and open joints. Seal with appropriate sealant.	twice per year	£						✓						✓
I.2.6	Below ground drainage	Open up inspection chambers. Check that all gullies and gratings are free from silt and debris and that water discharges freely to mains sewerage or soakaway.	twice per year	£						✓						✓



EXTERNAL PROGRAM/ESTIMATE SCHEDULE												
Building Element	Year											Total
	1	2	3	4	5	6	7	8	9	10	T	
<b>1. Roof covering</b> Iron/battens Flashing												
Inspection												
<b>2. Roof Drainage</b> Galvanised iron Cast iron												
Inspection												
<b>3. Eaves</b> Timber Birdproofing												
Inspection												
<b>4. Fabric</b> Galvanised iron Brickwork Timber Stone												
Inspection												
<b>5. Structure</b> Timber												
Inspection												
<b>6. Joinery</b> Windows Doors												
Inspection												
<b>7. Painting</b> Generally Window sills Door-frames Balustrade												
Inspection												
<b>8. Services</b> Stormwater												
Inspection												
<b>9. External Works</b> Timber fence Steel fence Concrete Paving Bitumen paving												
Inspection												
<b>10. Urgent maintenance</b>												
<b>TOTAL \$</b>												

Note: Frequency of inspections will be influenced by the rates of decay and deterioration, particularly to buildings recently purchased or poorly maintained.