

**CATHOLIC ARCHDIOCESE  
of  
MELBOURNE**

***MAINTENANCE  
of PARISH and  
SCHOOL BUILDINGS***

## **FOREWORD**

This Manual has been prepared by the Catholic Archdiocese of Melbourne to provide guidance and direction to Parishes and Schools on the maintenance requirements of their buildings.

Parishes and Schools need to be conscious of the importance of routine maintenance, and the fact that deferred maintenance is a false economy.

### ***Acknowledgments***

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## **INTRODUCTION**

Building maintenance can be defined as a combination of technical and associated actions to retain a building in, or restore a building to a state where it can fulfil its required function satisfactorily.

Maintenance of Parish and School buildings is sometimes regarded as unproductive and is consequently neglected. Maintenance expenditure is sometimes kept to a minimum, and the long-term effects of this approach are ignored or misunderstood. Neglect of maintenance results in rapidly increasing deterioration of materials, which can adversely affect the occupants, and the contents of buildings. All elements of a building deteriorate at different stages, depending on the material, construction method and environmental conditions.

A major responsibility of the Parish Priest or School Principal is therefore to establish a program of preventative maintenance, which, in the long run, will lessen the need for major repairs in parish and school buildings.

It is suggested that all parishes (and schools) establish a “Building and Grounds Committee” which would call upon professional and trades people within the parish, to meet on a regular basis, as a committee, to inspect and advise on the maintenance of buildings, under the care of the parish or school.

A process of good maintenance will result in pride in one’s building.

A responsibility of the Committee will be to determine the most economical and expedient method available to undertake maintenance.

The engaging of a tradesman from a local pool, as available, for small problems, to obtaining tenders for larger works will fall among the guidelines of such a Committee. (Refer to Section 11).

The notes prepared are a general indication only of a Maintenance Schedule.

Care has been taken to utilise “User Friendly” language to make this Publication more acceptable to the people, who look after our Parish and School Buildings.

## **SECTION 1**

## **WHAT IS MAINTENANCE?**

Maintenance falls into two broad categories, 'planned' and 'unplanned'.

### **Planned Maintenance**

Planned maintenance comprises maintenance, which is organised and carried out with forethought, control and in accordance with a plan.

This should be based primarily on a preventative approach, ie. Maintenance will be planned and carried out so as to avoid damage or deterioration of the structure and fabric of the building.

A well managed system of preventative maintenance will incorporate provisions for systematic inspections to allow for identification of items requiring attention or for planning of appropriate maintenance action in the future.

Planned maintenance can be further classified into three sub categories as follows:

- Major repair or restoration, such as re-roofing or refurbishment work.
- Periodic maintenance, such as annual steam cleaning of carpets or servicing of mechanical and electrical equipment.
- Routine or day to day maintenance, such as cleaning of floors and windows.

### **Unplanned Maintenance**

Unplanned maintenance is primarily corrective in nature, ie. Work is carried out when defects become apparent. Such approach is less satisfactory and more costly in the 'long run'. However, even in the best-planned systems of preventative maintenance, the need for unscheduled emergency maintenance can arise, e.g. storm damage, breakages or breakdowns.

### **Maintenance Aims and Priorities**

The main aim of maintenance is the preservation of a properly working building. The main priorities for maintaining Parish and School buildings are:

- To protect the health and safety of occupants and visitors to the building.
- To prevent or reduce deterioration of the fabric of the building.
- To maintain services such as heating and lighting installations.
- To maintain decorative surfaces / finishes, and carry out adequate cleaning.

*Deferred maintenance is a false economy. Remedial works will cost more in the 'long run'.*

## **SECTION 2**

# **FOUNDATIONS and FOOTINGS**

The *footings* are the structure below floor level, which transfers the loads of a building to the ground. It should not be confused with the *foundations, which* are the soil and rock upon which the footings rest.

Parish and school buildings may have a variety of footings, largely dependent on the building's age and type. These are generally described as follows;

(a) **concrete floor slab/footing system**

Most current day buildings incorporate this type footing whereby the concrete floor slab together with edge and intermittent concrete beams act as one stiff platform.

(b) **Concrete strip footing and stump system**

Commonly used prior to the 1970's, however still used today, particularly for domestic and gymnasium/hall type buildings.

(c) **Concrete strip footing and inlay concrete floor slab system**

This system was briefly used in the late 1960's and early 1970's. The strip footings are independent to the inlay floor slabs as opposed to item (a) above.

(d) **bluestone or rubble strip footings**

These types of footings are found in old buildings dating to the early 1900's and before.

## ***Maintenance requirements for foundations and footings***

The saying “out of sight, out of mind” often applies to maintenance of a building’s foundations and footings. It is not till visible damage occurs, such as cracks in walls, that it comes to the fore.

Footing damage or failure normally occurs because the surrounding foundation has either shrunk or expanded and taken the footing with it. In most cases this movement is caused by a change in the moisture content of the soil, especially in reactive types of soil such as clay. Other not so common causes include uneven settlement of fill, horizontal movement of a layer of soil and excessive vibrations.

To avoid and safeguard against damage or failure of the building’s footing system, it is essential that adequate measures be implemented. Common items to watch for are:

***Growth of trees and large shrubs in close proximity to buildings.***

The general guideline is that all trees and large shrubs should be kept away from buildings a distance of one and a half times their full maturity height.

***Excessive or irregular watering of gardens adjacent to the building***

Gardens should be watered regularly to meet the requirements of the vegetation and at no time, saturated sporadically.

***Lack of maintenance of the site drainage.***

The building’s surrounding ground levels should fall away from the building line and drain to appropriate storm water pits.

***Leaking plumbing and storm water services.***

Any leaking service such as sewer, water, downpipe and storm water drain should be repaired without delay.

***WHEN FOOTING DAMAGE OCCURS, CONSULT AN ENGINEER***

**SECTION 3**

## **FLOORS**

The key function of a building's floor is to exclude the ingress of moisture and provide a firm level platform to support the building's inhabitants, furniture and equipment.

Floors in Parish and school buildings are normally covered by finishes like carpet, vinyl and tiles, however the structural component is either concrete or timber construction.

### ***Maintenance requirements for floor structures***

As noted previously for foundations and footings, it is not till visible damage occurs that the need for adequate maintenance measures becomes evident.

Footing movement or moisture penetration normally causes damage.

To avoid and safeguard against damage, measures mentioned in Section 2 should be implemented. Other common items to watch for are:

#### **(a) CONCRETE FLOORS**

##### **Moisture**

Concrete floors have an underlying waterproof membrane to prevent the ingress of moisture from the soil beneath. The breakdown of this membrane is highly unlikely unless it was improperly installed at the time of construction.

- Most likely causes of moisture problems are associated with the ground surrounding the building.
- Generally it is good housekeeping practice to have abutting ground levels 50mm below the floor level for paved areas and 150mm for garden and unpaved areas.

- Buildings with external brick walls will have *weep holes* in the brick course just below floor level; this allows moisture that may penetrate the wall to be discharged to the outside. It is most important that these be kept clean and not covered by abutting pavements, soil or garden mulch materials, otherwise the moisture may build up and penetrate internally
- Surrounding ground and pavements should fall away from the building line.
- Moisture appearing on internal areas of the floor, well away from external perimeter walls may be attributed to a damaged plumbing service, however in some instances it may be entering through a penetration in the floor such as a sewerage pipe or electrical conduit.
- Buildings with inlay concrete floors may experience moisture penetration at the floor wall junctions.

Expert advice should be sought in regard to these two latter problems.

### **Floor movement**

Concrete slabs may be subjected to some movement dependent on foundation conditions, however in extreme cases; a section may fracture and move differentially to the remainder of the floor.

Expert advice should be sought in this regard.

## **(b) TIMBER FLOORS**

### **Moisture**

Timber floors are suspended well above the underlying soil and should generally not be subjected to penetrating moisture problems.

Damage to timber floor systems generally occurs due to timber decay, often called “dry rot”, although it is really a certain species of wood destroying fungi, which require warm moist conditions for maximum growth.

A timber floor will show many signs of decay before someone actually puts a foot through it. You may notice a musty smell, floors that are not level or are “bouncy”.

Adequate measures should be implemented to ensure that the floor, sub floor timber framing and stump footing system are protected against decay.

- External walls should be designed whereby sub floor vents allow adequate cross flow ventilation of the sub floor area. These vents should be kept clear at all times and not be covered over with pavements, soil or garden material. Again, abutting ground levels should be kept well below floor level and grading away from the building.
- In areas of extreme humidity, additional sub floor ventilation may need to be provided.

In older buildings with timber stumps, floors may be out of level or “bouncy” suggesting that the stumps may require replacement.

Always ensure that sub floor areas are maintained dry and any leaking water services are repaired without delay.

## **Termites**

Subterranean termites cause extensive damage to timber floors.

It is essential that inspections for termites be conducted regularly, particularly in areas of known infestation. An accredited pest Control Company should carry this out. Termite treatment or eradication does not guarantee a life long solution, it is only **temporary**.

Most termite spray treatments are only guaranteed for twelve months.

In known termite infestation areas the following procedures should be adopted:

- Do not build up soil or garden beds against buildings
- Do not stack timber or other materials against buildings
- Do not store wooden materials beneath buildings
- Make sure that there is good access for inspection around and under the building, especially against walls
- Fix leaking downpipes and gutters and ensure good drainage around and under the building
- Allow for adequate sub floor ventilation
- Have a regular, at least annual, inspection by your licensed pest control person

## SECTION 4

## WALLS

The key function of the walls of a building is to transfer structural loads to the underlying footing system, resist the penetration of the external environment, reduce heat loss or gain and retain appearance by resisting wear and tear.

Parish and school buildings may have a variety of different types of both external and internal wall constructions.

Walls and their finishes are susceptible to damage by wear and tear through the life of the building.

### *Maintenance requirements for external walls*

The main causes of damage to external walls are footing movement, moisture and the external elements.

Measures mentioned in both Sections 2 and 3 should be implemented to safeguard against damage.

#### (a) **MASONRY WALLS ( Brick, concrete block and stone construction )**

##### **Wall cracks or movement**

This type of construction, because of the rigidity of the material is often subjected to damage due to footing movement. Common damage encountered may consist of cracks and wall alignments that are out of plumb either vertically or horizontally.

Cracking in brick walls may have other causes other than footing movement, eg. Bricks growing due to moisture absorption, structural or shrinkage movements of the frame of the internal veneer skin.

- Fine cracks, generally less than 1mm in width may be disregarded. Wider cracks say less than 5mm in width may be filled, if of little visual concern.

Walls should be checked for cracks on a regular basis and all cracks monitored. Any damage greater than the above or out of plumb walls should be referred to a structural engineer.

### **Parapet walls**

Parapets in buildings are often the cause of concern. Exposed brickwork or masonry, above the roof level, may allow water penetration to the walls below. As a general rule the total exposed area of the parapet should be flashed or sheeted in sealed metal linings.

Inspect all parapet walls on an annual basis for loose or dislodged brickwork and instigate repairs as found necessary.

### **Moisture**

Masonry walls are porous and allow moisture to penetrate. To minimise moisture penetration into the internal faces, cavity walls are now standard construction.

Penetration of moisture through the outer skin, falls along the inside face of the outer skin, collected by cavity wall flashings below floor level and is discharged to the exterior through weep holes along the base of the wall below floor level.

Similarly, flashings and weep holes are installed over door and window heads, and under window sills.

**Rising damp** is moisture from the ground that is absorbed by the porous masonry. The drying action of the air on the upper surfaces causes the wall to act like a wick and suck the moisture up.

To prevent this, walls are constructed with a damp proof barrier just below floor level (damp proof course).

**Falling damp** is similar to rising damp however the source of the moisture is from roof leaks or wall parapets that are inadequately capped or flashed.

**Efflorescence** (salts) is the white staining caused by soluble salts, which are carried by the moisture.

In older buildings dating to the early 1900's and before, the walls may be constructed without a cavity and with lime mortar. These walls are most susceptible to moisture penetration.

Moisture penetration is commonly caused by blocked weep holes, cracks, defective mortar jointing, gaps in wall/window junctions, faults in the roof drainage system and breakdown of the d.p.c.

This may result in damage evidenced by blistered paintwork, mould spots on walls, plaster flaking away or feeling spongy, musty smells, bubbles and white powder or crystals appearing on walls, outside mortar fretting and falling out.

Safeguard against penetrating moisture by:

- Implement all measures mentioned in Sections 2 and 3.
- Ensure weep holes are clean and not covered over by abutting gardens or pavements.
- Cracks should be repaired / sealed.
- Leaks in gutters and downpipes should be repaired.
- Junction of walls to windows and doors should be adequately sealed.
- Check condition of mortar joints, if parts missing or eroded, repoint and adequately seal.
- Efflorescence (salts) appearing on the face of brickwork is a sign that moisture is present. Investigate source of moisture and carry out necessary repairs.

(b) **TIMBER FRAMED WALLS** (weatherboard, steel and cement sheet clad)

This type of wall construction is more flexible and does allow for minor footing movement without any noticeable damage. However this type of wall is generally less durable than masonry walls requiring more frequent maintenance such as repainting and cleaning.

Common maintenance items are:

- Deterioration of paint finishes
- Decay of timber weatherboards
- Wash down all surfaces on an annual basis

## SECTION 5

### **DOORS and WINDOWS**

Doors and windows are subjected to substantial wear and tear. Constant opening and closing, together with exposure to the elements take their toll, giving rise to many problems, eg. Doors and windows that do not close properly, penetration of moisture, and damage to door hardware such as handles and locks.

#### ***Maintenance requirements for doors and windows***

All doors and windows should be inspected **annually** and items found defective should be repaired promptly.

Doors and windows, particularly where exposed or not adequately protected from weather, tend to move according to weather changes. Doors should be checked annually for deterioration, particularly end grain timbers and the opening up of joints in the timbers.

Doors exposed excessively to the sun may require more regular painting than other doors.

The following measures should be implemented:

#### ***(a) Leaks at and around doors and windows.***

Normally occurs due to gaps in and around door and window frames, poorly fitting doors and window sashes, failure of mastic sealants.

- Mastic seal all gaps
- Replace or repair poorly fitting doors and sashes
- Replace or repair window seals and glass putty

(b) *Doors and windows sticking or jamming.*

Common problem with timber doors and windows due to the absorption of moisture. Also may be caused by wear and tear to hinges or footing movement.

- Plane doors and windows as may be required
- Check and tighten / adjust hinges
- Ensure painted finish to timber windows is maintained in good condition

(c) *Door and window furniture*

Locks and Padlocks

- Graphite powder should be applied in the hole and locking parts on an annual basis. Generally oils and lubricants should not be used, as they tend to attract dust and grit.
- Surrounds to locks, where fixed by screws, should be checked on a half-yearly basis and tightened if necessary.

Door Hinges

- Hinges should be oiled on an annual basis. Any door that tends to creak may result from a rusting hinge, which should be removed and cleaned.
- Where doors have become adrift from the hinges, make good to timbers, and replace screws with full thread, long length screws to obtain greater adhesion.

## SECTION 6

### CEILINGS

Common ceiling materials encountered in current day buildings are plasterboard, timber, suspended tiles and perforated metal. Older buildings may have lath and plaster, timber and caneite.

#### *Maintenance requirements for ceilings*

Generally, damage to ceilings occur due to moisture entering through the roof or physical damage caused by workmen. In older type buildings with lath and plaster and ceiling embellishments, moisture and movement may cause sections of plasterwork to become loose.

Caneite ceilings and suspended tile ceilings will sag when effected by moisture.

Plasterboard, fibrous plaster and timber ceilings can tolerate some moisture without noticeable damage.

The following measures should be implemented annually:

- ***Loose plaster***

Inspect ceilings for any loose sections of plaster or plasterwork embellishments and repair if necessary.

- ***Suspended tiles***

Inspect all tiles to ensure that they are sitting properly within suspension frames, reinstate where required.

- ***Moisture***

Inspect all ceilings for evidence of moisture damage, repair source of moisture leak and make good to ceiling as may be required.

- ***Structural support members to ceilings***

A structural engineer should examine all structural ceiling support members that show a degree of movement.

## SECTION 7

### ROOFS

Parish and school buildings may have a variety of roofing materials ranging from slate tile and corrugated iron in older buildings to terra cotta tile, concrete tile and metal in more recent buildings.

Roofs require regular maintenance. This section summarises the most common problems, which arise.

#### *Maintenance requirements for roofs*

Generally, most basic roofing materials have minimal deterioration. Weathering, erosion, fading and lichen growth will slowly change their colour and appearance. However, roof leaks are usually caused by failure of an accessory to the roofing system (eg. flashings, mortar in tile roofs / pointing, blocked gutters and down pipes) or in the case of tile and slate roofs, cracked or displaced tiles.

**All roofs, roof gutters and down pipes should be cleaned on a 3 monthly cycle, more often in high vegetation areas.**

Annual maintenance items are:

#### **(a) SLATE TILED ROOFS**

Most common problem with slate roofs is the ‘slipping’ of tiles usually caused by the failure of the tile nailing system.

Unfortunately, old roofs may require complete renailing which is normally very costly.

- Inspect slates for slippage, dislodged or broken tiles. Repair as necessary.

- Inspect all flashings, cappings, gutters and downpipes.  
Repair any sections found defective.

### **(b) TERRA COTTA AND CONCRETE TILED ROOFS**

Most common problems with these roofs is failure of the tile pointing and damage due to foot traffic

- Inspect tiles and pointing for breakages. Repair as necessary.
- Inspect all flashings, cappings, gutters and downpipes.  
Repair any sections found defective.
- Take care when walking on tile roofs. To avoid cracking or breaking tiles, always walk on the tile nosing.

### **(c) METAL ROOFS**

Older metal roofs (corrugated iron) would most probably show considerable rust stains and should be programmed for replacing in the near future.

More recent galvanised steel, zincalume and colorbond steel roofs are more durable, however care must be taken to ensure that incompatible roofing metals are not joined as this will cause corrosion through electro-chemical reaction. Copper/steel, lead/aluminium and lead/zincalume are not compatible

All copper pipes that may be laid on top of zincalume roofing should be physically isolated from the zincalume and painted, as rainwater running off the copper onto the zincalume will cause corrosion.

Similarly zincalume roofs should not drain onto galvanised roofs, gutters or downpipes.

- Inspect metal surfaces for rust stains and treat as necessary.
- Inspect all flashings, cappings, gutters and downpipes.  
Particularly around roof penetrations such as heater flues.  
Repair any sections found defective.

- Inspect for water ponding in roof trays and repair as necessary.

**(d) Internal roof gutters (box gutters)**

Always pay added attention to the box gutter maintenance. Any blockages will most likely result in water penetration. In school buildings, these should be inspected on a **weekly** basis for blockages caused by balls, plastic bags and wrappers, and other debris.

- Inspect all roof box gutters regularly, weekly for school buildings and clean as found necessary.

**(e) Fascias, bargeboards and eaves**

Timber fascias and bargeboards are highly susceptible to decay. It is essential that joints and mitres be well sealed to prevent moisture penetrating end grain of timber.

- Inspect all fascias, bargeboards and eaves for decay and evidence of moisture damage. Repair as necessary.

## **SAFETY MEASURES**

OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS MUST BE ENFORCED AT ALL TIMES WHEN UNDERTAKING ANY FORM OF ROOF MAINTENANCE.

IT IS RECOMMENDED THAT ROOF INSPECTIONS AND MAINTENANCE BE UNDERTAKEN BY QUALIFIED TRADESMEN.

## SECTION 8

### **BUILDING SERVICES**

This section covers the maintenance requirements for building services.

**ALL WORK CARRIED OUT TO THE FOLLOWING ITEMS SHALL BE CARRIED OUT BY LICENSED TRADESMEN AND A CERTIFICATE OF COMPLIANCE SHALL BE ISSUED BY THE TRADESMEN UPON COMPLETION.**

#### **(a) Electrical installation**

The following measures should be implemented on an **annual** basis:

- Inspect electrical switchboards, sub boards and circuits.
- Inspect all electrical equipment and appliances.
- Inspect and replace all lamps to light fittings as found necessary.
- Inspect all electrical fittings, particularly power points and switches to ensure that they are not loose or have come adrift from the wall or ceiling surfaces.

#### **(b) Heating installations**

Common forms of heating usually installed in Parish and School buildings are gas or electric console heaters, gas wall heaters, gas wall mounted radiant heaters and gas ducted heating systems.

General **annual** maintenance requirements are:

- Fans should be inspected and cleaned to avoid the build up of dust.
- Filters should be cleaned or washed.
- All flues should be inspected to ensure that there are no blockages or damage and are operating correctly.

- Cleaning of all ducts.
- Refer to the Manufacturer's Operations Manual for maintenance requirements.

**(c) Evaporative Cooling Systems**

- The evaporative cooling systems should be inspected and cleaned by a mechanical contractor **twice** a year.

**(d) Refrigerated Air-conditioning systems**

- Filters should be cleaned on a **3 monthly** basis.

**(e) Maintenance of Cooling Towers**

Recent Legislation following community concern about Legionnaires disease, has brought about an enforcement of "best practice", for the maintenance of cooling towers.

Building owners are now required to develop and implement risk management plans. All cooling towers need to be registered and an audit undertaken by Independent Auditors or Public Health Inspectors. Guidelines have been produced by the Department of Human Services to assist building owners in their responsibilities to test for Legionella.

Maintenance of Mechanical Systems will become a part of Essential Services Maintenance Practice.

## **(f) Hot Water Services**

Relief valves in hot water units should be released on a **six monthly** basis so as to clear the overflow pipe of collection of grit, dirt and even spiders. This will overcome the possibility of a build up in pressure and a possible bursting of the “break” valve.

However, valves will ultimately fail and should be replaced as quickly as possible to avoid undue damage. Hot Water Units, where possible should be **drained annually** to clear the bottom of the tank of sediment build up. The cold water supply connection should be removed and a hose inserted in the inlet hole

When the overflow becomes clear, it could be assumed that most sediment has been removed.

## **(g) Plumbing**

The following inspections should be implemented and repairs carried out as found necessary

**Taps:** inspect on a 3 monthly basis for leaks.

**Toilets:** Pipe Seals - Seals should be checked and replaced to retain the seal where necessary, on an annual basis. Flooding may result if the seal deteriorates.

Cisterns, again, should be checked on an annual basis. Washers should be replaced and wearing parts oiled.

Push Buttons and surrounds to concealed cisterns should be checked for movement and the surrounds recemented or tightened as necessary.

## **Toilet Blocks**

Toilet Blocks, unfortunately, are an obvious area of concern particularly in Schools. The lack of supervision, presence of taps (with water) all contribute to this concern.

Care for instance, should be taken on the types of issues of toilet paper holders, which restrict toilet paper being removed in bulk. Adequate provision should be made for disposal units in Female Toilets. Blocked sewerage line occur only too often, and children must be made aware of the problems and costs caused by endeavouring to dispose of unwanted articles, such as lunches, and fruit down toilets.

Deodorant tablets should not be allowed to dry up in Urinals, as they tend to cause rusting of the Urinal and even blockages of the outlets. Tablets, as a rule, should only be used sparingly.

### **(h) Maintenance of Essential Services**

It is **mandatory** for all essential services installed in buildings to be maintained in accordance with the relevant authority requirements.

**Refer to Appendix A for all requirements in this regard.**

## SECTION 9

### **EXTERNAL GROUNDS AND STRUCTURES**

This section covers the general maintenance measures that should be implemented to external pavements, drainage system, landscape features, irrigation systems, fences and retaining walls.

#### **(a) Pavements**

Paved areas should be maintained in good condition, faults may contribute to a tripping and possible injury. Accidents of this type are all too common in School grounds.

#### **Asphalt Paving**

Severe recurring faults may require expert advice, and competent workmen.

#### **Potholes & Cracking**

Fill in level to the top surface.

#### **Edge Failure**

Provide proper-bedded edging in the form of concrete kerbs or timber edging.

#### **General Surface Faults**

Surface faults may be caused by:

- Old age
- Wear and tear

Remove affected areas, and replace or resheet.

Surface faults may be due to faulty or blocked drainage systems, or tree roots. Sub pavement penetration may require special attention.

Generally, it could be stated that the more use the asphalt surface receives from general traffic, the better the wearing surface. Considerable care should be taken to prevent the following:

- i. Access of heavy commercial vehicles to the paved area.
- ii. Droppings from diesel engines onto the asphalt should be removed as diesel oil will destroy the surface.

### **Concrete Paving**

Faults may be caused by:  
Insufficient drainage  
Incorrect bedding  
Lack of reinforcement

#### **(b) Drainage**

Stormwater lines should be cleaned out regularly to minimise blockages. This should be done by inserting a hose with good water pressure.

Stormwater pit lids should be lifted and pits cleaned out monthly, particularly in the autumn to keep access to stormwater lines open and remove build up of leaves, debris and silt. A drop-in cage may be considered to catch the run off of materials prior to entering the system

**(c) Landscape features**

Landscape areas and features should be inspected annually. General pruning and trimming of bushes and trees should be carried out regularly to avoid overgrowth, overhanging of branches onto buildings and removal of any dangerous tree limbs.

**(d) Irrigation systems**

Irrigation systems should be inspected annually for leaks and damaged or missing sprinkler heads.

**(e) Fences**

Fences should be inspected annually and repaired as found necessary.

Timber fences generally have a life span of between 10 to 15 years.

Special attention should be given to brick fences to ensure that they are structurally adequate, particularly high walls. Be aware of the damage that tree roots can cause.

Repair or replace any freestanding brick wall that is out of vertical alignment.

**(f) Retaining walls**

Similarly to brick fences, any masonry retaining wall that is leaning forward should be repaired/replaced.

Ensure trees and large shrubs are not planted on the high side of the wall, if so remove.

Ensure wall drainage (weep holes or agricultural drains) is working adequately in draining of the sub ground water.

## SECTION 10

### **EXTERNAL and INTERNAL FINISHES**

Apart from providing acceptable appearances to walls, floors, ceilings and joinery, appropriate finishes contribute significantly to the durability of the building fabric. Proper choice and care of finishes can contribute not only to the appearance of the buildings and their environment but also to limiting the extent of wear and tear, prolonging its useful life and reducing running costs.

This section covers the general maintenance issues, which commonly arise in relation to finishes.

#### **(a) Painted surfaces**

Annual maintenance extends the life of painted surfaces and, therefore, enables a reduction in the frequency of repainting compared with ad hoc repainting.

A seven- (7) year maintenance cycle should be implemented for all painted surfaces, both internally and externally, whereby total repainting is carried out in the first year. During the subsequent six years, maintenance will be performed in which all surfaces will be inspected and any paint damage or breakdown arising from normal wear and tear is rectified by sectional repainting. Any noticeable accumulation of dirt, grime or dust should be removed by detergent washing or cleaning as appropriate.

Upon completion of year the 7 years, the cycle begins again with total repainting.

**(b) Carpet floor coverings**

Generally commercial quality carpets should be programmed for replacement on an average of 7 to 10 year cycle, depending on the level of foot traffic. In heavy use areas it may be sooner.

Carpets should be steam cleaned annually

Frayed edges should be repaired to minimise deterioration and even tripping to children.

Loose threads should be removed carefully with a knife or scissors, and not allowed to unravel further.

Carpets floors particularly broadloom, require stretching when they have been laid for a period of time.

**(c) Vinyl floor coverings**

Most contemporary vinyl floors do not require to be polished, but mopped and buffed only. Polish build up where applied, will result in the need for excessive maintenance.

**(d) Ceramic Tiles – floor and wall**

Ceramic tiles should be checked on an annual basis to determine if “drummy”. Where necessary, defective areas and cracked cement should be made good.

**(e) Polished Timber floors and Parquetry**

Maintain clean at all times. Avoid the placement of chairs and furniture with steel legs that may cause scratches.

Allow to repolish every on at least a 5 year cycle if not sooner.

**(f) Furniture and joinery cupboards**

Check door hinges on a regular basis and repair as required.

**(g) Chalkboards pinboards and whiteboards**

Clean regularly in accordance with manufacturer’s recommendations. Do not use spirit-based markers on whiteboards.

## SECTION 11

### **CONTRACTING WORK**

In undertaking any works to Parish and School buildings, the scale and complexity of the task needs to be considered

**All building works in excess of \$25,000 require approval from His Grace the Archbishop and should be referred to the Diocesan Building Committee.**

**Refer to the Diocesan Building Procedures Manual for the guidelines in this regard.**

**NOTE:** The Proprietor for all Contracts shall be specified as **The Roman Catholic Trusts Corporation for the Diocese of Melbourne represented by** (insert name of Archbishop's delegated authority for Parish, School or College).

Where works comprise of structural rectifications, it is strongly recommended that an Architect or Structural Engineer be engaged.

The following guidelines should be adopted when appointing contractors:

- Assess the scope of the work and consider the need for professional advice.
- Check with local Municipality to determine whether the works require any Town Planning or Building Approvals.
- Prepare appropriate documents for the work adequately detailing the works required
- Seek several quotations from competent contractors
- Make sure that the contractor submitting the lowest quotation has allowed for all the works.
- Check that the contractor to be awarded the contract has the relevant trade registration.
- Check that the contractor's insurances are in order.

- Always accept a contractor's quote in writing, clearly stating the agreed scope of works.
- Monitor progress of the works and notify the contractor in writing of any difficulties.
- Upon completion of the works and before final payment, ensure that the contractor issues you with all relevant Authority Certificates.

**NOTE:**

- **All work must be carried out in accordance with the Occupational Health and Safety Act 1985 (Vic) and Occupational Health and Safety (Asbestos) Regulations 1992.**
- **All Parish, School and College buildings must have an Asbestos audit report undertaken and made available to contractors prior to the contracting of any work.**
- **School Principals should obtain a Clearance Certificate for asbestos from the Catholic Education Office for portable classrooms located on their site.**

**Refer to Section 12 – Occupational Health and Safety Obligations.**

## **SECTION 12**

# **OCCUPATIONAL HEALTH AND SAFETY OBLIGATIONS**

### **General obligations to employees and contractors**

The Occupational Health and Safety Act 1985 (Vic) imposes duties on all Parishes, Schools and Colleges to provide a safe working environment for its employees and contractors (and their employees) that they directly engage to perform building or maintenance work.

Specifically these duties are:

- Provide and maintain safe systems of work (procedures) and plant (equipment).
- Make arrangements for the safe use, transport, handling and storage of plant and substances.
- Maintain a safe workplace.
- Provide adequate welfare facilities (first aid equipment and training, toilets and hygienic lunchrooms).
- Provide adequate information and training (for example about hazards and risk control measures) to enable employees to perform their work in a safe manner.

To comply with these obligations, Parishes, Schools and Colleges must have in place documented safe work procedures and systems. In addition, specific hazard identification, risk assessment and control procedures are required as appropriate for every site.

## **Building Projects**

Parishes, Schools or Colleges cannot contract out their obligations regarding Occupational Health and Safety by attempting to pass on these obligations to a builder or contractor engaged to perform building work. This is despite the fact that usually a builder may have full control of the site. To discharge these obligations, reasonable procedures should be implemented to ensure that the builder / contractor provides and maintains a safe working environment for its employees, subcontractors and the public.

To minimise the Parishes' risk, any builder engaged to perform works should have responsibility for safety issues under the building contract. Further, prior to commencing work, the builder should provide an Occupational Health and Safety plan that must be complied with throughout the project. The plan should comprehensively address the builder's procedures for occupational health and safety matters, including safe work systems, incident reporting, plant maintenance and operation, worker training and emergency procedures.

# APPENDIX A

## ***MAINTENANCE OF ESSENTIAL SERVICES***

### **1. What are essential services?**

(a) Essential services are the fire and life safety items installed or constructed in a building to ensure adequate levels of fire safety over the life of the building. Essential services include all traditional building fire services such as :

- i. Fire Hydrants and Hose Reels
- ii. Fire Sprinklers

but also include passive fire safety such as :

- i. Fire Doors
- ii. Smoke & Thermal Detectors
- iii. Fire Rated Structures
- iv. Emergency Lighting and Luminated Exit Signs

and other building infrastructure items such as paths of travel to exits.

(b) Most Parish and School buildings will have some of the equipment noted above.

### **2. Why do they need to be maintained?**

(a) The objective of maintenance is to ensure that every essential service continues to perform at the same level of operation that existed at time of commissioning and the issue of the Occupancy Permit. The maintenance of essential services involves;

- Ensuring the service is maintained at a level of performance specified by the relevant building surveyor (Usually to the Building Code of Australia (BCA))
- Periodical inspections and checks in accordance with an Australian Standard or other specified methods.
- Maintaining a register record of the maintenance inspections and checks in the form of an annual essential service report.

(b) Reasons for ensuring maintenance of various services;

- General wear and tear, i.e. electromagnetic hold open devices on fire doors, shut down of air conditioning system in fire situation, replacement of emergency lighting batteries and tubes.
- Reliability of a system operating, i.e. sprinkler system, mechanical ventilation system (used as a smoke hazard management system), early warning and intercommunication system.
- Faults after commissioning of a system, ie. Emergency power supply.
- General housekeeping, ie. Ensure paths of travel to exits are not obstructed, fire protective coverings are maintained, portable fire extinguishers remain in place.

3.

**What buildings require maintenance of essential services?**

- (a) The maintenance of essential services applies to Class 1b, 2, 3, 5, 6, 7, 8, and 9 buildings as defined in the Building Code of Australia 1996. These classifications include granny flats, multi-storey residential buildings, hotels/motels, offices, shops, warehouses, factories and hospital/public buildings or buildings of a public nature respectively.
- (b) Diocesan Buildings which may be affected by Classification of Buildings and Structures Regulations
  - A. Class 3 – Residential building which may include the
    - A Health Care Building residential part of the School. The residential part of the Health Care building which accommodates members of staff e.g.
      - (a) Convents
      - (b) Hostels for the Elderly
      - (c) Nursing Homes for the Elderly
      - (d) School Dormitories
    - Assembly Building e.g.
      - (a) Parish Hall or Church
      - (a) Primary or Secondary School
  - B. Class 9 – Class 9B
    - A building of a public nature
      - (a) Part 11 of the Building Regulations 1994 prescribes the requirements for maintenance of buildings and is divided into two divisions; buildings that were built before 1 July 1994 and buildings that were built on and after 1 July 1994.

4. **Owners responsibility**

**Buildings Built On and After 1 July 1994**

- (a) The current regulations have made it mandatory for the Building Surveyor to list the required essential services on the issued Occupancy Permit. The level of performance to which the service is to be maintained must also be specified on the occupancy permit. In the case of an essential service being provided where no occupancy permit is required, then the level of performance must be specified in writing and given to the owner.
- (b) The regulations require that the owner:
  - (i) Maintain records or register of maintenance checks, and
  - (ii) Complete essential service reports in accordance with Regulation 11.6 before each anniversary of the date of Occupancy Permit or determination under regulation 11.4, and
  - (iii) Keep all essential service reports and records of maintenance checks on the premises for inspection by the municipal building surveyor or chief officer at any time on request.

The carrying out of maintenance procedures is dependent on the complexity of the service and the experience of the person carrying out the inspection. The owner, service installer, maintenance contractor or internal maintenance personnel may maintain systems where appropriate.

**(c) Buildings Built before 1 July 1994**

- (i) The regulations require the maintenance of safety equipment, safety fittings or safety measures within existing buildings. These items are not defined as

essential services as those requirements only apply to buildings built (issued with occupancy permits) on and after 1 July 1994.

- (ii) The owner is however still responsible for ensuring that the safety equipment, safety fittings or safety measures is maintained in a state which enables them to fulfil their purpose.
- (iii) The safety equipment, safety fittings or safety measures that are to be maintained are the items installed or constructed in the building that were required by the regulations at the time of construction. These will typically be similar to those listed as essential services.
- (iv) Owners are also responsible for the maintenance of exits and paths of travel to exits. The exit paths must be maintained in an efficient condition and kept readily accessible, functional and clear of obstruction so that egress from the building or place of public entertainment is maintained. That is, to ensure proper housekeeping of the paths of travel to exits and keep exit doors and door hardware functioning.

## **5. What happens if an owner doesn't comply?**

The regulations prescribe penalties for non-compliance of up to \$1,000 for each breach of the regulations and the municipal building surveyor or chief officer of the relevant Fire Brigade (MFB or CFA) undertakes this enforcement. However the greatest concern for building owners is that if essential services and other safety items are not maintained then the risk of failure of the item when it is needed (ie. in an emergency) increases significantly.

Below is a list of Essential Services that are to be inspected and tested on a regular basis.

It should be noted, of course, that many of these Essential Services would not exist in your particular building, and some of the services would be required to be undertaken by Specialists where noted.

A number of these services can be undertaken by the Officers of the Diocesan Building Advisory Service.

## Recommended Inspection Authority (All authorities or consultants should be properly qualified and experienced).

- (a) Manufacturer or Installer of the Equipment
- (b) Building Surveyor or Electrician
- (c) Diocesan Building Advisory Service, Building Surveyor or Consultant Builder
- (d) Fire Brigade Connections i.e. Metropolitan Fire Board or Country Fire Authority Service Group
- (e) Fire Protection – Consultant Plumber or Service Group
- (f) The Responsible Authority at local level i.e. Principal, could make a visual inspection.

Essential Service to be Inspected or Tested.	Installation standards / Level of Performance	Nature of Inspection or Test / Frequency	Recommended Inspection Authority
Air Conditioning Systems	AS 1668	Monthly to AS 1851.6, AS 3666	(a)
Emergency Lifts	BCA E3.4, AS1735.2	Weekly to Occupational Health and Safety (Plant) Regulations 1995	(a)
Emergency Lighting	BCA Part E4, as 2293.1	6 Monthly to AS 2293.2	(b)
Emergency Power Supply	BCA Spec G3.8	6 Monthly	(b)
Emergency Warning and Intercommunication Systems	BCA E4.9, Spec E1.5, Spec E1.7, AS 2220	Monthly to AS 1851.10	(b) or (f)
Exit Doors	BCA Section D	3 Monthly inspection to confirm Exit Doors are intact, operational and fitted with conforming hardware	(c) or (f)
Exit Signs	BCA Part E4, AS 2293.1	6 Monthly to AS 2293.2	(b)
Fire Brigade Connections	BCA Spec E1.7, Vic H101.9, Vic H103, AS 1670	Weekly to AS 1851.8	(d)
Fire control centres	BCA Spec E1.8	Annual inspection	(a)
Fire control panels	BCA Vic H101.9, AS 1603.4	Weekly to AS 1851.8	(a)
Fire curtains	BCA Spec H1.3	Annual inspection	(a)
Fire dampers	AS 1682.2	Annual inspection to AS 1851.6	(a)
Fire detectors and alarm systems	BCA E1.7, AS 1670	Weekly to AS 1851.8	(b) of (f)
Fire doors (including signs)	BCA spec C3.4, AS 1905.1	Monthly to AS 1851.7	(c)
Fire extinguishers (portable)	BCA E1.6, AS 2444	6 monthly to AS 1851.1	
Fire hose reels	BCA E1.4	6 monthly to AS 1851.2	(d)
Fire hydrants	BCA E1.3, AS 2419.1	Weekly to AS 1851.4	(d) or (f)
Fire indices for materials	BCA C1.10, AS 1530.3	Annual inspection to confirm no materials with potentially non-conforming fire indices occur	(c)
Fire isolated lift shafts	BCA Section C	Annual inspection	(c)
Fire isolated passageways	BCA Sections C and D	Annual inspection	(c) or (f)
Fire isolated ramps	BCA Sections C and D	Annual inspection	(c) or (f)
Fire isolated stairs	BCA Sections C and D	Annual inspection	(c) or (f)
Fire mains	BCA Part E1, AS 2118, AS 2419.1	Weekly to AS 1851.4	(e) or (f)
Fire rated control joints	BCA Section C	Annual inspection	(c)
Fire rated materials applied to building elements	BCA Section C	Annual inspection	(c)
Essential Service to be Inspected or Tested.	Installation standards / Level of Performance	Nature of Inspection or Test / Frequency	Recommended

			ned Inspection Authority
Fire resisting shafts	BCA Section C	Annual inspection	(c)
Fire resisting structures	BCA Section C	Annual inspection	(c)
Fire shutters	BCA Spec C3,4 AS 1905.2	Annual inspection	(a)
Fire windows	BCA Spec C3,4	Annual inspection	(c)
Fire rated access panels	BCA Part C3	Annual inspection to AS 1851.7 equivalent	(c)
Lightweight construction	BCA C1.8	Annual inspection	(c)
Mechanical ventilation systems	BCA E2.2, G3.8, Spec H1.3, AS 1668	Monthly to AS 1851.6, AS 3666	(a) or (f)
Paths of travel to exits	BCA Section D	3 monthly inspections to confirm travel paths are intact	(f)
Penetrations in fire-rated structures	BCA Part C3	Annual inspection	(c)
Smoke alarms	BCA E1.7, G3.8, Vic H101.9, Vic H103	Monthly to AS 1851.8 (as applicable)	(b) or (f)
Smoke control measures	BCA Part E2, G3.8, Part H1	Monthly to 1851.6	(c)
Smoke doors	BCA spec C3.4	Monthly to AS 1851.7 equivalent	(c)
Smoke vents	BCA E2.4, G3.8, AS 2665	6 monthly to AS 1851.5	(c)
Sprinkler systems	BCA, E1.5, AS 2118, Code of practice for installation of residential life safety sprinkler systems	Weekly to AS 1851.3	(e) or (f)
Stairwell pressurisation systems	BCA E2.2, AS 1668.1	Monthly to AS 1851.6	(a)
Static water storage	BCA Part E1 AS 2118, AS 2419.1	Annual inspection	(e)
Vehicular access for large isolated buildings	BCA C2.4	Annual inspection to confirm access is maintained.	(c)
Warning systems associated with lifts (including signs)	BCA Part E3	Annual inspection	(a)

**REGISTER OF MAINTENANCE INSPECTIONS**  
**FOR** .....  
**(Name of Building)**

**Refer Appendix**  
**TYPICAL LIST**

Refer list of items on Occupancy Permit. Allow for current list of items to be retained for inspection by the Municipal Building Surveyor.

Essential Service to be Inspected or Tested.	Nature of Inspection or Test / Frequency	Suggested Dates of Inspection
Airconditioning Systems	Monthly	1 <sup>st</sup> Monday each month
Exit Doors	Quarterly	Say, 1 <sup>st</sup> Monday February May August November
Emergency Warning Systems	Monthly	1 <sup>st</sup> Monday each month
Emergency Lighting	6 monthly	Say, 1 <sup>st</sup> Monday July February
Exit Signs	6 monthly	Say, 1 <sup>st</sup> Monday July February
Fire Doors	3 monthly	Say, 1 <sup>st</sup> Monday July October February May
Fire Hydrants	Weekly	Monday Mornings
Fire Isolated Passageways	Annually	Say, 1 <sup>st</sup> Monday February
Fire Isolated Ramps	Annually	February
Fire Isolated Stairs	Annually	February
Fire Mains	Weekly	Monday Mornings
Mechanical Ventilation Systems	Monthly	Say, 1 <sup>st</sup> Monday each month

# ESSENTIAL SERVICE BUILDING REGULATIONS

## 1. Regulatory requirements

The regulatory requirements relating to maintenance of essential services are contained in Part 11 of the Building Regulations 1994.

## 2. Maintenance

- (a) The maintenance provisions of Part 11 of the Building Regulations 1994 (the Regulations) are divided into two divisions. Division 1 details with maintenance of essential services in buildings where building work is carried out under the building Act 1993 (the Act) (constructed on or after 1 July 1994). Division 2 deals with maintenance of safety equipment, safety fittings, safety measures and exits or paths of travel to exits in existing buildings which the relevant building surveyor must determine.

**(b) Division 1: Maintenance of essential services.**

Practice Note No. 23 (attached) provisions guidance to the levels of performance and frequency of maintenance of essential services in Class 1b, 2, 3, 5, 6, 7, 8 and 9 buildings, which the relevant building surveyor must determine.

**(c) Division 2: Maintenance generally**

Safety equipment, safety fittings or safety measures in existing Class 1b, 2, 3, 5, 6, 7, 8, and 9 buildings and places of public entertainment (constructed before 1 July 1994) must be maintained by the owner in accordance with the regulation 11.9.

- (d) Exits or paths of travel to exits must be maintained in an efficient condition and kept readily accessible, functional and clear of obstruction so that egress from the building or place is maintained.
- (e) The level of maintenance excepted by inspecting authorities should not be greater than the required at the time the equipment, fitting or safety measures was installed. If there was no specific standard of maintenance in force at the time, then any relevant Australian standards available at the time may be used as a guide to adequate maintenance.
- (f) If there was no relevant Australian standard available at the time, then the first published edition of a relevant standard may be used as a guide to adequate maintenance or consideration could be given requiring the equipment, fitting or safety measure to be upgraded to current standards a practice via Part 8 of the Act.

## 3. Enforcement

- (a) The Commissioner, municipal building surveyor or chief officer may issue a building infringement notice (on the spot fine) under Division 9 of Part 13 of the Act and Part 8 of the regulations for an offence against regulations 11.4, 11.5, 11.9 and 11.10.

- (b) A building infringement notice must be issued in the form of a Form 9. The notice sets out the prescribed penalty to be paid and must also indicate additional steps required, if any, to rectify the offence. The penalty at present, is \$200 for each offence.

## **4. Offences under Division 1 of the Building Regulations**

- (a) An offence against regulation 11.4 may be failure to maintain an essential service to the level of performance required by a determination made under regulation 11.4(1).
- (b) An offence against regulation 11.5 may also be maintaining records of maintenance checks, failure to complete an essential service report (in accordance with regulation 11.6) before each anniversary of occupancy permit or determination under regulation 11.4, or failure to keep all essential service reports and records on the premises for inspection purposes.

## **5. Offences under Division 2 of the Building Regulations**

- (a) An offence against Regulation 11.9 may be failure to maintain any safety equipment, safety fitting or safety measure in a state in which it can fulfil its purpose, or removal of any safety equipment.
- (b) An offence against Regulation 11.10 may be failure to maintain any exits or paths of travel to exits in an efficient condition or failure to keep them readily accessible, functional and clear of obstruction so that egress from the building or place of public entertainment is maintained.
- (c) Where it is suspected that there may be evidence that an offence against the Act or regulations has occurred, an inspection may be carried out under section 231 of the Act. A building infringement notice may be issued as a consequence of this inspection.

## **6. Practice Note 23**

### **Maintenance or Essential Services (where the permit was issued after July 1994)**

- (a) Regulation 11.3 of the building regulations requires a building surveyor issuing an Occupancy Permit to include on the permit, a condition which lists all the essential services referred to under regulation 11.2 pertaining to that building or place of public entertainment. This would specify the level of performance determined by the relevant building surveyor for each essential service. A similar requirement appears in Regulation 11.4 in relation to certain situations where an Occupancy Permit is not required to be issued.

- (b) The accompanying table provides guidance to building consultants and interested parties as to the level of performance that should be specified and the nature and frequency of inspection or testing that should generally be expected. It should be noted that where an Australian Standard or other document is cited with regard to the frequency of the inspection or test, only the shortest time period has been mentioned in order to draw attention to the routine requirement. This should not be read as suggesting or recommending an exemption from the more rigorous testing or inspecting which those documents recommend at greater intervals of time.
- (c) Where not specified, inspections should confirm that the relevant essential service is intact and in a state that would enable it to perform its required function.
- (d) The level of maintenance expected in the future by inspecting authorities should not be greater than that required at the time the initial requirements were determined. As an aid to all concerned the relevant building surveyor should specify the particular edition (and any amendments) of any documents referred to, when determining the required level of performance for each essential service

## **ESSENTIAL SERVICE MAINTENANCE**

### **PLUMBING & ELECTRICAL WORKS**

Following recent Legislation Amendments, it is recommended that when having plumbing or electrical works undertaken on Parish Buildings, the following should apply :

1. **Plumbing Works**

All works shall be carried out, by a licensed plumbing contractor registered under the Plumbing Industry Board. The Contractor should be asked to confirm this prior to commencing any works.

For any works in excess of \$500.00 with the exception of gas appliances, the Contractor shall issue a Certificate of Compliance upon completion of the works.

Should the Contractor fail to issue a Certificate of Compliance, he should be reported to the Plumbing Industry Board. It would also be prudent not to pay his invoice subject to further advice from the Plumbing Industry Board.

2. **Electrical Works**

All works shall be carried out, by a licensed electrical contractor registered under the Chief Electrical Inspector's Board. The contractor should be asked to confirm this prior to commencing any works.

Upon completion of any works, regardless of their costs, the contractor shall issue a Certificate of Electrical Safety.

Should the Contractor fail to issue a Certificate of Electrical Safety, he should be reported to the Chief Electrical Inspector. It would also be prudent not to pay his invoice subject to further advice from the Chief Electrical Inspector's Office.

# ESSENTIAL SERVICE MAINTENANCE

## EXIT DOORS

### PURPOSE:

To provide a means of egress from any part of a building.

### REQUIREMENTS OF THE EQUIPMENT:

To provide sufficient and safe egress from a building, with a minimum of effort and delay and to present a minimum of obstruction in an exit path.

### METHOD OF OPERATION:

An exit door must be capable of simple operation to fulfill its designed purpose.

It must be able to be opened readily without a key, from the side facing a person seeking their way out, by a single handed downward or pushing action, on a single device located between 900 mm and 1.2m from the floor.

It could be fitted with a fail-safe device which unlocks the door automatically when any sprinkler, smoke or heat detector system in the building is activated.

### MAINTENANCE CHECKS:

BCC Practice Note 23 recommends exit doors be inspected every three months by the owner. The owner may delegate this function to another person or body when necessary or appropriate.

Maintenance checks should be carried out to ensure the exit door is :

- Intact
- Operational
- Fitted with hardware that conforms to the requirements of the Building Code of Australia, Section D. (the hardware necessary to enable its operation as outlined above).

### MAINTENANCE RECORDS:

A sheet to record the maintenance and inspections carried out is included Appendix D of this Manual.





# ESSENTIAL SERVICE\MAINTENANCE

## EMERGENCY LIGHTING

### PURPOSE:

To safeguard occupants from injury by providing sufficient lighting to allow safe occupant evacuation in an emergency.

### REQUIREMENTS OF THE EQUIPMENT:

Emergency lighting system must :

- (a) Be installed to AS2293:1; and
- (b) Be automatic in operation in the event of failure of power supply to the main lighting system; and
- (c) Provide a level of illuminance appropriate :
  - i. to the use and size in floor area of the building; and
  - ii. the distance required to reach exits.

### METHOD OF OPERATION:

#### Central Lighting Systems

This type of system will be set up to operate in one of two modes:

- Where the emergency lighting is energized at all times when the building is occupied; or
- Where the emergency lighting is energized only when power to the normal lighting system fails.

#### Single Point Light Systems

Each unit “stands alone” and illuminates when normal lighting fails. Power is supplied from a built-in battery which is continuously under charge while normal lighting operates.

### MAINTENANCE CHECKS:

BBC Practice Note 23 recommends maintenance to be carried out at least every six months by the owner. The owner may delegate this function to another person or body where necessary or appropriate.

#### Single Point System

##### Six Monthly Procedures

- (a) Operate the self contained emergency lights from their battery supply by turning off the normal lighting power supply;
  - (b) The lights must remain alight for at least 90 minutes
  - (c) Replace any faulty lamps
  - (d) Turn on the normal lighting power supply and check that the battery charger indicator functions properly:
- Record the test and correct operation of the system
  - Record the replacement of faulty laps

## Twelve Monthly Procedures

- (a) Carry out the six monthly procedures
- (b) Clean down all light emitting and reflecting surfaces  
Record the testing and cleaning.

## Central Lighting System

Checks should be undertaken on the following elements of your system.

- batteries
- battery chargers
- inverters
- distribution and control equipment
- lights and exit signs
- the complete system

## Six Monthly Procedures

### Batteries

- (a) Lead acid batteries – using a hydrometer and referring to the maintenance manual, test randomly selected cells for :
  - i. Electrolyte density
  - ii. State of charge.  
Record the result of this test.
- (b) All batteries, including lead-acid batteries:
  - i. Visually check electrolyte levels of each cell,  
Record those cells that require topping up.
  - ii. Visually inspect all cell containers for electrolyte leakage. Have leaking cells repaired or replaced by a qualified person.  
Record any repairs or replacement.

### Battery Chargers

- (a) Visually inspect the unit
- (b) Clean unit and cubicle of dust and dirt
- (c) Check batter voltage reading is within normal limits.
- (d) Check all connections are tight.  
Record the carrying out of these checks.  
Record battery voltage reading.

### Inverters

- (a) Visually inspect all components
- (b) Record the inspection
- (c) Record D.C input voltage and current
- (d) Record D.C.output voltage and current

### Distribution and Control Equipment

- (a) Visually inspect relays, contactors, circuit breakers and fuses  
Record inspection and any problems identified.

- (b) Check all connections for tightness  
Record the check.
- (c) Remove any dust and dirt accumulated within the distribution and control equipment enclosures. Record the clean
- (d) Check that sensing equipment operates system when isolated from A.C mains supply.  
Record the check and any problems identified.

#### **Emergency lights and exit signs**

- (a) Check all lights and exit signs for correct operation,
- (b) Replace any faulty lamps.  
Record the check and any lamps replaced.

#### **Total System**

- (a) Check for correct operation when battery charger turned off and mains failure simulated.
- (b) Check satisfactory operation of the charger-failure alarm while carrying out above check.
- (c) Record these checks and any problems identified.  
Restore the system to normal operation, and check correct charging of batteries.

#### **Twelve Monthly Test**

**Batteries** – for any battery requiring maintenance of electrolyte above a specified level.

Lead acid batteries only – for each cell.

Using a hydrometer and referring to the maintenance manual,

- (a) Check electrolyte density
- (b) Check state of charge  
Record the results of these checks.

#### **All types of Batteries** – (including lead acid)

- (a) Visually check electrolyte level in all cells.  
Record level for each cell.
- (b) Visually inspect all cells for electrolyte leakage. Mop up and neutralise any spilt liquid, using baking powder dissolved in water.  
Record the inspection and any faults found.
- (c) Inspect all cell connections for corrosion and tighten any loose joints
- (d) Treat all exposed metal surfaces with petroleum jelly or other recognised battery terminal preservative. Record the inspection and treatment.
- (e) Measure overall battery voltage and individual cell voltage, using a finely calibrated voltmeter. Record any cell with a voltage difference from average of more than +0.03 volt.

#### **Battery Charger**

- (a) Carry out tests required in six monthly test  
Record the test.
- (b) Check voltmeter calibration.  
Record the check and result.

- (c) Check satisfactory operation of battery earth-fault detection system, if fitted.  
Record the check.
- (d) Check satisfactory operation of the battery low-voltage alarm, if fitted.  
Record the check.

### **Inverter**

- (a) Carry out tests on items required in six monthly test.  
Check the tests.
- (b) Check the voltmeter calibration  
Record the check and result.

### **Lights and Exit Signs**

- (a) Carry out all checks required in the six monthly test.  
Record the tests.
- (b) Clean all light emitting and reflecting surfaces.  
Record the cleaning.

### **Total System**

1. Check battery voltage on completion of discharge test, by the following method:
  - (a) Turn off battery charger.
  - (b) Simulate mains failure (turn off power)
  - (c) Using all the installed emergency lighting; test discharge for at least 90 minutes.

Record battery voltage on completion of this test. If battery voltage is below acceptable limits after completion of this test, re-service or replace the battery.

Record re-service or replacement.

2. Measure the time taken for the battery charger to change over automatically to the “float charge” mode, after;

- \* Disconnecting the load
- \* Turning on the battery charger
- \* Manually selecting ‘boost charge’ mode.

Record the time taken.

The above testing procedures are detailed in AS 2293.2. These procedures must be available to your designated tester in a hard bound A4 size maintenance folder. This folder must be provided by the installer of your system.

### **MAINTENANCE RECORDS:**

A manufacturers’ hard bound log book, or an alternative system (this would include this manual) approved by the Responsible Authority (building surveyor), is required by AS 2293.2 for the recording of maintenance information.

Sheets for this purpose are included in the log book provided in Appendix D of this Manual.

**ESSENTIAL SERVICE\MAINTENANCE  
EMERGENCY LIGHTING  
Six Monthly & Twelve-Monthly Procedures**

Name of Building \_\_\_\_\_ Name of Owner \_\_\_\_\_

Address: \_\_\_\_\_

Level of performance and frequency of maintenance (as specified on occupancy permit): \_\_\_\_\_

Unit	Task	Routine 1 i.e. 6 Month	Routine 2 i.e. 12 Months	Signature
Battery Charger	Visual Inspection of Unit			
	Clean Unit and Cubicle			
	Check Battery Voltage – Record Voltage			
	Check all Connectors			
	Check Voltmeter Calibration – Record Result			
	Check battery earth – Fault Detector Operates			
	Check Battery Low – Voltage Alarm Operates			
Inverter	Visual Inspection of Unit			
	Check D.C. Input Voltage – Record Voltage			
	Check A.C Output Voltage – Record Voltage			
	Record Voltmeter Calibration – Record Result			
Distribution and Control Equipment	Visually Inspect – Relays, Contactors, Fuses Circuit Breakers			
	Check all Connectors for tightness			
	Clean down equipment and enclosures			
	Check sensing equipment operates system correctly when normal lighting supply isolated.			
Emergency lights and Exit Signs	Check all lights operate – correctly			
	Replace faulty Lamps			
	Clean reflecting and light emitting surfaces			
Total System	Check proper operation with battery – charger off and mains supply isolated.			
	Check charger – failure alarm operates			
	Check correct batt-charging when system restored			
	Check and record battery voltage after discharge			
	Test – 100% of lights for atleast 90 minutes.			
	Battery/Charger change over time to “float Charge” mode, after “boost” mode selected – Record time			
	Record battery re-service or replacement			

Date Rectify	Name & Address of Person Conducting Inspection	Problems identified	Action to
Date of Problem		Signature	

# ESSENTIAL SERVICE\MAINTENANCE

## EMERGENCY LIGHTING SYSTEM – SINGLE POINT LIGHTING

Name of Building: \_\_\_\_\_ Name of Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Level of Performance and Frequency of Maintenance (as specified on Occupancy Permit) \_\_\_\_\_

Date of Inspection i.e. 6 Monthly																						Date of Rectification	Signature
Name and Address Of Person Inspecting		Light Number																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Endurance of Battery After Power Turned Off	Time in Mins (at least 90)																						
Faulty Lamp replaced	√ If Replaced																						
Proper Function of Battery Battery Indicator	√ Yes X NO																						
Date of Inspection i.e. 12 Monthly																							
Name and Address Of Person Inspecting																							
Endurance of Battery After power turned off	Time in Mins (at least 90)																						
Faulty Lamp Replaced	If √ replaced																						
Proper Function of Battery Charger Indicator	√ Yes X NO																						
All Light emitting and Reflecting surfaces cleaned	√ When Completed																						

## ESSENTIAL SERVICE/MAINTENANCE EMERGENCY LIGHTING SYSTEM – BATTERIES

Name of Building: \_\_\_\_\_ Name of  
Owner: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Level of performance and frequency of maintenance (as specified on Occupancy  
Permit) \_\_\_\_\_

Date	Name of Tester	Status	+	Positive	Cell	Numbers	Negative -	Date Problem Rectified	Signature
Lead acid Battery		Reading off hydrometer							
10% of cells random		High – H Medium – M Low – Low							
<u>All</u> batteries		H, 3/4, 1/2, 1/4 low							
All Cells		Neutralise Spills							
Lead acid Battery		Reading off Hydrometer							
All Cells		High – H Medium – M Low – L							
<u>All</u> Batteries		H, 3/4, 1/2, 1/4 low							
All Cells		Neutralise Spills							
Cell Connections Corrosion, tightness		√ when checked							
Coal Connection With terminal preservative		√ when completed							
Individual Cell Voltage		Note any >+0.03V							
Overall Battery Voltage		Reading off Voltmeter							
Date	Name & Address of Person Conducting Inspection	Problems Identified on Inspection	Action Taken to Rectify Problem						

# ESSENTIAL SERVICE/MAINTENANCE

## EXIT SIGNS

### **PURPOSE:**

Exit Signs are provided to aid occupant identification of exits and paths of travel to exits.

### **REQUIREMENTS OF THE EQUIPMENT:**

Exit Signs must be :

- (a) Installed to AS 2293.1; and
- (b) Clearly visible to persons approaching an exit; and
- (c) Located in positions where exits are not readily apparent, i.e. corridors, hallways and lobbies, with directional arrows indicating the direction to an exit; and
- (d) Located on, above, or adjacent to each door providing egress. (as detailed in BCA E4.5); and
- (e) Clear and legible in writing with adequate size letters and symbols; and
- (f) Provided with emergency illumination in the event of normal power supply failure.

### **METHOD OF OPERATION:**

Exit signs must be set up to operate as follows :

- be illuminated at all times by mains power supply or by being a self contained unit, and
- be either internally or externally illuminated, and
- have a provision for emergency power supply in the event of failure of the normal power source.

### **MAINTENANCE CHECKS :**

BCC Practice Note 23 recommends maintenance to be carried out at least every six months to AS 2293.2 by the owner. The owner may delegate this function to another person or body where necessary or appropriate.

The testing procedures of exit signs are detailed in AS 2293.2. These procedures must be available to your designated tester in a hard bound A4 size maintenance folder. This folder must be provided by the installer of your system.

### **MAINTENANCE RECORDS :**

A manufacturers' hard bound log book, or an alternative system approved by the Responsible Authority (building surveyor), is required by AS 2293.2 for the recording of maintenance information.

Sheets for this purpose are included in the log book provided in Appendix D of this Manual.



## ESSENTIAL SERVICE/MAINTENANCE

### FIRE INDICES FOR MATERIALS

#### **PURPOSE :**

To indicate the suitability or otherwise, of building materials, assemblies, linings and surfaces finishes in the ability to resist spread of flame and generation of smoke.

#### **REQUIREMENTS :**

The indices provide a means of assessing building materials and components, using standard tests as outlined in AS1530.3, for their performance according to :

- (a) their tendencies to ignite
- (b) their tendencies to propagate flame
- (c) the heat they release once ignition has occurred, and
- (d) their tendencies to release smoke

Using the above criteria, selection of suitable material can be made to fulfill a proposed class of building. Testing and selection of materials takes place prior to construction and finishing of a new building.

Building owners must ensure that any new material introduced to their premises conforms to the requirements of the Building Code of Australia.

#### **MAINTENANCE CHECKS:**

The regulations require an annual inspection of this facility be carried out by the owner to ensure that materials that do not conform to the fire hazard indices do not occur in or have not been introduced to the premises. The owner may delegate this function to another person or body where necessary or appropriate.

The manufacturer or supplier of these materials should be able to advise whether their product conforms.

#### **MAINTENANCE RECORDS:**

To ensure compliance with the building regulations, owners of the buildings must record the details of their yearly inspections.

Details that must be recorded include :

- identification of the premises; and
- site address; and
- name of building owner; and
- date inspection carried out; and
- any non-conforming materials identified; and
- steps taken to remove or replace the non-conforming materials; and
- name and signature of person carrying out inspection

A log sheet to record this information is included in Appendix D of this Manual.



## APPENDIX B

### **PLANNED MAINTENANCE CHECK LIST**

A Programme of Inspection is to be established so that, on a regular basis, the complete fabric of the building is monitored, recorded and the appropriate action undertaken.

	Location of Inspection	Comments or Problems	Action Taken or Referred To	Date of Inspection
<b>A. MEANS OF ESCAPE</b>				
<b>B. PLUMBING</b>				
(a) Hot Water Units				
(b) Roofing & Accessories				
i. Gutters				
ii. Downpipes				
Niii. Accessories				
(c) Stormwater Sumps				
(d) Toilets & Cisterns				
(e) Fire Service				
(f) Plumbing & Fittings				
i.. Troughs				
ii. Toilets				
iii. Urinals				
iv. Basins				
v. Taps				
(g) Gas Heaters				
(h) Evaporative Cooling & Airconditioning systems				
(i) Other Items				
<b>C. ELECTRICAL</b>				
(a) Heaters				
(b) Cooling Systems				
(c) Lighting				
(d) Power Outlets				
(e) Computer Outlets & Other Systems				
(g) Other Items				

<b>D. CARPENTER</b>				
(a) Locks & Hinges				
(b) Doors				
(c) Timber Windows				
(d) Cupboards				
(e) Chalkboards				
(f) Whiteboards				
(g) Pinboards				
(h) Termites				
(i) Fascias				
(j) Wall Sheeting				
(k) Eaves Lining				
(l) Other Items				
	Location of Inspection	Comments or Problems	Action Taken or Referred To	Date of Inspection
<b>E. FLOORING &amp; PAVING</b>				
(a) Ceramic Tiles				
(b) Brick Paving				
(c) Carpet				
(d) Vinyl				
(e) Other				
(f) Asphalt Paving				
<b>F. EXTERNAL BUILDING MATERIALS</b>				
(a) Brickwork				
(b) Concrete				
(c) Wall Sheeting				
(d) Other				
<b>G. PAINTWORK</b>				
Per Room				
(a) Walls				
(b) Ceilings				
(c) Doors				
(d) Architraves, Skirting etc				
(e) Cupboards				
WINDOWS:				
(f) Glazing				
<b>H. INTERNAL WALL &amp; CEILING MATERIALS</b>				
(a) Plaster				
(b) Brickwork				
(c) Other				

