north east & yorkshire
NET ZERO HUB

SERVICING AND MAINTENENANCE GUIDE

North East & Yorkshire Net Zero Hub

Public Sector Estate Decarbonisation Programme

Loco2gen

Turner & Townsend

OUR PARTNERS

Hull & East Yorkshire LEP, North East LEP, South Yorkshire Mayoral Combined Authority, Tees Valley Combined Authority, West Yorkshire Combined Authority, and York & North Yorkshire LEP

Contents

1 Introduction

1.1 Purpose

This guidance document sets out the importance of building servicing and maintenance. As well as detailing servicing and maintenance techniques which can be used effectively to manage a building, whilst also covering the required minimum legislative requirements individuals responsible for maintaining, managing, or specifying the maintenance of building services; such as facilities managers and landlords must complete.

It also details the use and benefits of external servicing and maintenance schedule providers to help the upkeep of your building portfolio.

2 What is Servicing and Maintenance

Organisations will generally have a specific team which is responsible for up-keep of general servicing and maintenance across their buildings and site portfolio. Although, it may be necessary for qualified and external personnel to complete servicing and maintenance in regard to plant and equipment.

2.1 Why is it important?

Building's maintenance and servicing involves the keeping of its fabrics, fittings, utilities, plant, and equipment in good condition, in efficient working order and in good repair.

Buildings do more than provide shelter from the heat and cold, or from sun, wind, and rain; they must also provide a safe and healthy environment in which people can live, work, and achieve.

2.2 Health and Safety

Employers have a general duty under the Health and Safety at Work etc. Act 1974 to ensure, so far as is reasonably practicable, the health, safety, and welfare of their employees at work. People in control of non-domestic premises have a duty (under the same Act) towards people who are not their employees but use their premises.

The workplace, and certain equipment, devices and systems should be maintained in efficient working order (efficient for health, safety, and welfare). Such maintenance is especially required for mechanical ventilation systems; equipment and devices which would cause a risk to health, safety, or welfare if a fault occurred; and equipment and devices intended to prevent or reduce hazard.

2.3 Levels of Servicing and Maintenance

- **Discretionary:** non-critical servicing and maintenance.
- **Statutory:** Compliance servicing and maintenance.
- **Mandatory:** Sector or organisational specific servicing and maintenance.
- **Optimal:** Function critical servicing and maintenance.

2.3.1 Repercussions of not servicing and maintaining appropriately

The repercussions of not servicing and maintaining appropriately include:

- Depreciation of building.

- Not complying with safety standards.
- Increased risk of accident.
- Ineffective maintenance costs more money. Usually more expensive to make reactive repairs than preventative actions.
- Inefficient operations and wasteful of resources, such as energy.

2.3.2 Advantages of servicing and maintaining appropriately

The advantages of ensuring proper maintenance and servicing is carried out include:

- Cost saving long term.
- Limit deterioration of building fabric both internal and external.
- Optimise performance of systems such as heating and lighting.
- Maintain asset value of the building.
- Ensure compliance with statutory requirements.

3 How are buildings serviced and maintained?

A building's function will dictate how much maintenance is required. If operating 24 hours per day or in a harsh environment, inspections and maintenance are likely to be more frequent. Similarly, the degree of reliance on the engineering services for normal facility operation will affect how much maintenance is required. The age, condition, reliability and installation standard of plant and systems can also determine how much maintenance is required.

3.1 Building Records

A policy cannot be fully effective without well-kept service and maintenance records. These provide a history of work done and faults that have been rectified and are invaluable when alterations, services, and maintenance are planned or if emergencies occur.

The maintenance and servicing records should include detailed drawings (originally supplied by the builder/ equipment fitters). Layouts of services, calibration and technical documentation from equipment supplier and service records for both statutory inspections and maintenance inspections or tests.

Once established and maintained, the records should be:

- Available for inspection either by statutory bodies, contractors or personnel.
- Kept up to date and regularly reviewed for continued relevance.
- Kept in duplicate with one copy off the premises, in line with disaster recovery requirement.

For the management of multiple sites, it is recommended that the building servicing and maintenance records include the following legal information:

- Any obligations stipulated under the terms of a lease, e.g. to redecorate the premises after every 5 years.

- Statutory and insurance inspections/ services.
- Ownership and maintenance obligations of party, separating and boundary walls.
- Any service, inspection and maintenance requirements laid down by the planning, building control or fire authorities.

The provision and maintenance of these records form the basis of inspections, services, and the next phase of maintenance plans. The records show what should be prevailing, the inspections and services show what is prevailing and hence where maintenance is required.

3.2 Planned Preventative Maintenance

Planned preventative maintenance (PPM) refers to any system where premises and equipment maintenance tasks are planned and scheduled on a regular basis. The fundamental principle is that regular maintenance and inspection keeps buildings, equipment and pant running efficiently and prevents problems such as unexpected breakdowns.

PPM involves the development of structured schedules or plans which set out the work that needs to be done, and when. This allows maintenance budgets to be set and necessary works to be arranged which provides a more cost-effective and less disruptive approach. However, in practise not all maintenance needs can be predicted, and most maintenance systems will involve an aspect of both planned and reactive arrangements.

3.3 Rolling Servicing and Refurbishment Plans

Any buildings service and maintenance schedule should include a rolling programme of redecoration and improvement to ensure that the premises presents a safe and effective environment at all times. These plans for ongoing servicing, maintenance, and improvement may or may not be included in the PPM but will generally be completed on a gradual step-by-step basis improving one area after another as a series of discrete projects. For example, redecorating, new carpets, upgrading heating and electrics, upgrading facilities etc.

3.4 Urgent Repairs and Emergencies

Planned preventative servicing and maintenance systems ensure that the risk of breakdowns and building facility emergencies are kept to a minimum. However, no maintenance system can rule them out altogether. It is therefore necessary to support PPM systems with an effective way of identifying, reporting, prioritising, and completing urgent emergency repairs.

Examples of repairs that would commonly regard as urgent in commercial buildings include:

- Partial loss of electrical power, water, or heating.
- Faulty or unsafe lighting socket or electrical fittings.
- Blocked or leaking drains, toilets, or sinks.
- Leaks from water pipes, tanks, cisterns, or roofs.

- Broken or insecure external windows, doors, or locks.
- Loose stair treads, or handrails.
- Inoperative security systems such as CCTV or burglar alarms.
- Serious faults involving information technology and communication infrastructure.

Urgent repairs should be assessed and priorities to ensure they are dealt with immediately. Appropriate actions should be taken to ensure safety and temporary contingency measures may have to be taken to reduce risk pending full repair. For example:

- Gas leaks.
- Flood or fire.
- Complete heating system failure in winter.
- Total loss of water supply or major leak (burst pipe).
- Electrical failure impacting on critical systems such as computers and business communication systems.
- Serious structural failure.

Although, these emergency repairs can be minimised by utilising an effective servicing schedule to ensure any breakdowns or deterioration of a building and its facilities are reduced through continuous maintenance.

3.5 Servicing and Maintenance Inspections and Surveys

All buildings and site portfolios should be subject to regular, planned service and maintenance inspections. These can be completed by the premises manager or team where they have responsibility, or appropriate qualified contractors.

There are no set frequencies for servicing and maintenance inspections or surveys, but it is advised that plant, mechanical or electrical and equipment should be inspected according to the manufacture's guidelines with guarantee or statutory requirements. This can be:

- Weekly
- Monthly
- 3-monthly
- 6-monthlly
- Yearly

4 Who You Should Contact for Servicing and Maintenance

Your key contacts for completing building servicing and maintenance can depend on your building size and site portfolio.

This section will cover the responsibilities different site operatives are expected to manage to help you identify your point of contact for necessary servicing and maintenance.

4.1 First-year operation and maintenance requirements

In the first year of usage of a new installation it is typical contractual practice to require installers, as a form of warranty of their work, to be formally responsible for any equipment, component or operational defects that may arise or become apparent. While designers are not directly implicated in this liability, their professional duty of care usually leads to an involvement in

some way. This may be limited to identifying the true cause of any problem and providing an independent opinion on the apportionment of responsibility for a defect. In the case of more fundamental defects, the designer's input may entail a review of the design itself and, in extreme cases, the recommendation of design changes.

Details of all such defects should be fed back to the design team for formal review. This approach helps designers to work towards a 'right first time' approach and to filter out plant, equipment or design features that could lead to potential problems.

It is stressed that the contractual or warranty responsibilities for defects in the first 12 months after formal completion have nothing to do with, and do not include responsibilities for, routine maintenance. It should also be noted that the need for maintenance attention does not lessen because the installation is new.

4.2 Historic Listed Buildings

4.2.1 Historic England [1]

Historic England are the public body that helps people care for, enjoy, and celebrate England's spectacular historic environment.

They are responsible for ensuring inspections are carried out at regular intervals, coupled with prompt action to pre-empt, or remedy problems, are the basis of effective maintenance for historical sites.

Historic England don't usually work with individual owners directly, as decision-making power ultimately resides with the local authority. Owners should therefore contact the local planning authority in the first instance.

They are consulted by local authorities on certain planning or listed building applications. Broadly, these relate to proposals for Grade I and II listed buildings and the most serious changes to Grade II listed buildings.

As well as offering advice on any matter affecting the historic environment at the special request of local authorities, or where they feel their particular area of expertise may help in decision making.

To contact them regarding your historical building please use the following details:

Email:
customer@HistoricalEngland.org.uk

Telephone: 0370 333 0607

4.3 Estates and Facilities Manager

The role of a Facility Manager (FM) can vary depending on the property and the business. However, there are typical building processes that managers are expected to be responsible for. These range from strategic planning and management of day-to-day operations

[1]To find more information on Historic England please visit this site: https://historicengland.org.uk/advice/technical-advice/buildings/maintenance-and-repair-of-older-buildings/#:~:text=Inspections%20carried%20out%20at%20regular,the%20value%20of%20the%20building

to security and building maintenance. As well as ensuring the health and safety of occupants.

Estate managers are generally in direct communication with the owners of any such properties. They ensure accurate planning and execution of the general design for management of the property and other staff. After making plans, they disseminate the information to the specialized domestic staffing teams.

Typically, they're expected to lead the management of services such as:

- Scheduling and planning maintenance and building repairs.
- Lighting, plumbing, and electrical inspections.
- Maintenance of heating, ventilation, and air conditioning (HVAC).
- Handling legal or contractual matters (with occupants and third-party suppliers).
- Providing occupants with the right equipment and amenities.
- Being compliant with health and safety regulations.
- Making sure occupants are happy and safe through space management.
- Ensuring the property and its surroundings are kept secure.

4.4 Estates Staff

The estates team can range from a single person to a large team depending on the building size and site portfolio.

Estates staff are generally more hands on and complete the day-to-day tasks delegated by the Estates and Facility Managers.

4.5 Caretakers

A caretaker is responsible for day-to-day servicing, maintenance, and management of the building and its assets. Generally, they look after buildings like schools, community centres and flats. Their duties include keeping them secure, clean, and well-maintained by performing simple repairs.

4.6 External Maintenance Engineers

Maintenance engineers work independently or as part of a crew usually specialised in a branch of engineering such as electrical, mechanical, building services or biomedical, and will generally need privately calling for their service. For example:

- Biomedical engineer, maintaining and managing medical equipment in operating theatres, intensive care, neonatal units, accident & emergency or radiology.
- Plant maintenance engineer making sure that water supplies and drainage, electrical systems, boilers, and alarms are working well within buildings.
- Heating, ventilation, and air conditioning (HVAC) engineer, making sure all building areas are safe to use and kept at the right temperature, for example to keep patients warm, or vital supplies cool.

- Building services engineer, overseeing the installation and maintenance of systems within buildings, including lighting, lifts, communications, and security.

5 Building Servicing and Maintenance Legislative Requirements

How frequent areas of a building, items, and its plant are inspected can vary as highlighted above in section 3. However, some servicing and maintenance of your building is set by the need to comply with health and safety legislation. Figure 1 shows a timeline of Building Servicing and Maintenance Legislative Requirements, as well as 'rule of thumb guidance'. This section will provide a breakdown of those minimum legislative required servicing and maintenance, and their frequency.

5.1 Electrical Systems

5.1.1 Electrical Installation Condition Report

Most standard workplace environments need an Electrical Installation Condition Report to be produced at least every 5 years. However, there should be regular routine inspections conducted at least annually.

Typically workplaces which require 5 Yearly Fixed Wire Testing include:

- Commercial spaces such as offices and retail outlets.
- Hotels and restaurants (excluding spa hotels).
- Schools, colleges, and universities.
- Laboratories.
- Community centres, churches, and public houses.

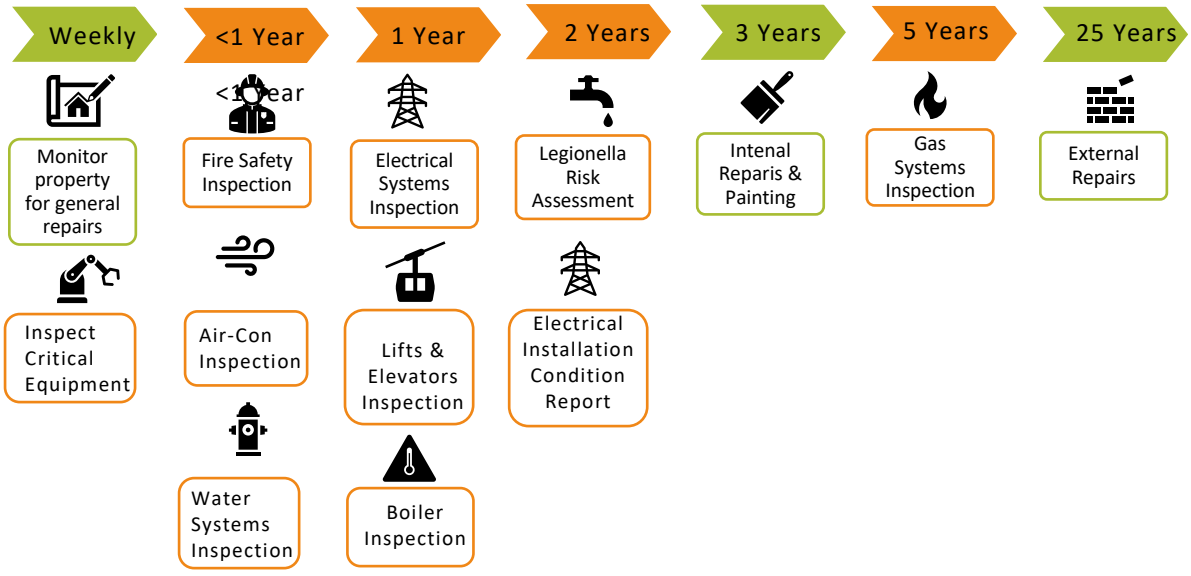

Figure 1:Timeline of Building Servicing and Maintenance Requirements

Orange represents the minimum legislative building servicing and maintenance requirements

Green represents rule of thumb building servicing and maintenance.

- Care homes and hospitals (excluding medical locations).
- Halls of residence, houses of Environments which, for example are exposed to moisture, dust, extreme temperature or which are open to general public constitutes a higher risk and therefore require testing every 1-3 years, with more frequent routine inspections also required.

Typical workplaces or environments which require 3- or 1-year Fixed Wire Testing include:

- Leisure centres – 3 years.
- Industrial Units -3 years.
- Theatres and places of public entertainment – 3 years.
- Agricultural or horticultural establishments – 3 years.
- Medical locations in hospitals or clinics – 1 year.
- Swimming pools and saunas – 1 year.

5.1.2 Lighting Conductors – Section 5 of Electricity at Work Act 1989

All lightning conductors and earth grounding installations should be visually inspected and tested at regularly fixed intervals, preferably not exceeding 12 months. The testing should be carried out to BS 6651 standard.

5.2 Gas Systems

5.2.1 The Gas Safety Regulation 1998

Any business and building that is reliant on gas systems fall under the buildings maintenance statutory requirement of the Gas Safety Regulation 1998. All gas systems must be checked at minimum, once a year by a valid Gas Safe registered engineer providing a full service, inspection; and a certificate will be issued.

The regulation states that gas appliances must be maintained and serviced in line with the manufacturer's recommendations. In many cases, particularly with larger equipment, this will be more frequently than annually.

5.3 Water Systems

5.3.1 Health and Safety at Work Act 1974

Water systems are tested under the Health and Safety at Work Act 1974. Water can harbour hazardous substances and must be rigorously tested to ensure there is no risk to occupiers. Two assessments take place under the building maintenance statutory requirement:

1. Building must be issued with a certificate for Legionella Risk Assessment which is valid for 2 years from issue.
2. A monthly check of water temperature to ensure optimum conditions.

5.3.2 Boilers

There is no lawful time frame for how often a boiler should be serviced. The law states that any landlord must ensure a boiler is safe and operates correctly in line manufactures standards. To keep a boiler in good condition, it is typically advisable to book boiler services one a year. Failure to maintain a boiler could result in high maintenance costs, therefore preventative measures should be taken.

5.4 Fire Safety

5.4.1 The Regulatory Reform Order 2005

Since 2005, the Regulatory Reform Order has required all businesses to have an individual responsible for fire safety – often called a Fire Safety Officer. They need to regularly inspect all fire systems such as alarm, extinguishers, lighting, escape routes and ensure they follow relevant standard. They also need to document risk assessments and determine that all staff are up to date with the evacuation plan and regularly drilled.

5.4.2 Emergency Lighting

System must undergo 3hr drain down of emergency light batteries on an annual basis after which a level of 1.0 lux, is required at floor level for defined escape routes. Monthly switch on tests are also recommended.

5.5 Air Conditioning

5.5.1 The Energy Performance of Buildings Directive

The Energy Performance of Buildings Directive states that from January 2011 it is mandatory for Air Conditioning Systems of 12kW and above to have a regular inspection programme in place.

5.5.2 EU F-gas Regulation N0.842/2006

Under the EU F-gas Regulation No.842/2006, all businesses and organisations must have an air conditioning maintenance plan in place. However, the frequency depends on the size and weight of refrigerant:

- Every 12 months (for buildings over 3 kg refrigerant – usually shops with 1-15 air conditioning units)
- Every 6 months (for buildings over 30kg refrigerant – usually larger buildings with more than 15-75 air conditioning units)
- Every 3 months (for buildings over 300kg refrigerant – very large office buildings with more than 75 air conditioning units), leakage detection systems must also be installed on systems of this size.
- If a leak is detected and repaired, a further check must be carried out within one month to ensure that the repair has been effective

5.6 Lifts and Elevators

5.6.1 The Lifting Operations & Lifting Equipment Regulations 1998, Regulation 9.

Lifts provided for use by workers in workplaces are subject to the Lifting Operations and Lifting Equipment Regulations (LOLER).

To verify that lifting equipment and accessories remain safe for use, and to detect and remedy any deterioration in good time, thorough examinations are required throughout the lifetime of the equipment, including examinations:

- **Before use for the first time** - unless the equipment has a Declaration of Conformity less than one year old and the equipment was not assembled on site. If it was assembled on site, it must be examined by a competent person to ensure that the assembly (eg a platform lift installed in a building) was completed correctly and safely
- **After assembly and before use at each location** - for equipment that requires assembly or installation before use, e.g. tower cranes
- **Regularly, while in service** - if the equipment is exposed to conditions that cause deterioration which is likely to result in dangerous situations. Most lifting equipment will be subject to wear and tear and so will need regular in-service examination. Some may be exposed to significant environmental conditions which may cause further deterioration. You have a choice: arrange for thorough examination to be carried out at the intervals specified by LOLER every 6 or 12 months.

This is a systematic and detailed examination of the equipment and safety-critical parts, carried out at specified intervals by a competent person who must then complete a written report. This report must contain the information required by LOLER Schedule 1, including:

1. the examination date.
2. the date when the next thorough examination is due.
3. any defects found which are (or could potentially become) a danger to people.

Where serious defects are identified, the competent person carrying out the examination must immediately report this verbally to the duty holder. This should then be followed by the written report, a copy of which must also be sent to the relevant enforcing authority.

As well as escalators, and similar machines, platforms and stair lifts, and all conventional passenger lifts must meet the requirements for safety and conformity of either the Supply of Machinery (safety) Regulation 2008 or Lift Regulations 2016 in their design, construction, and installation, when first brought into use.

Most elevator companies recommend having an elevator such as a passenger lift serviced every 12 months to ensure your elevator

remains safe, reliable, and efficient. This service usually includes a visual inspection as well as testing the elevator's operation functions, door safety mechanisms, and drive system.

However, elevators are complex pieces of machinery, and they need to be maintained in order to function properly; therefore it is necessary to take preventative servicing and maintenance measures more frequently.

6 External Building Servicing and Maintenance Support

6.1 Service and Facilities Group 20 (SFG20)[2]

SFG20 was created in 1990 by the Building Engineering Services Association (BESA) and is recognised as the industry standard for building maintenance specifications. The database contains over 2000 maintenance schedules and guides for more than 70 equipment types, which are kept updated by BESA dynamically to reflect changes in legislation and health and safety regulations; allowing you to build and customise maintenance schedules to suit your estate's business needs. This removes the requirements of consulting the manufacturer guidelines for each asset, saving Facility Managers time and hassle whilst making it easier for an organisation to remain compliant.

With colour-coded prioritisations, you can easily identify which tasks are statutory tasks, mandatory tasks, function critical tasks, and discretionary tasks so you can be sure of the optimal maintenance of assets. You'll also know the specific skill sets required to complete certain tasks, so you always have the right team for the job.

Each task can then be attributed to either site caretaker (for instance for weekly inspections) through to external contractors for more onerous tasks included those requiring specialist training.

Applying the standards and procedures detailed in SFG/20 will ensure safe and efficient operation of all relevant building services.

6.1.1 Price

SFG20 is available on an on-going subscription basis. However, the subscription fees vary according to size of business and level of the product purchased.

You can receive a pricing quote using their contact portal.

6.2 Building Services Research and Information Association's (BSRIA) Statutory Compliance Inspection Checklist[3]

[2] To find more information about the Service and Facilities Group 20 please visit this site: https://www.sfg20.co.uk/what-is-sfg20

[3] To find more information about the Building Services Research Information Association please visit this site: https://www.bsria.com/uk/product/BR4Y6n/statutory

BSRIA provide a checklist and guide to help facilities managers negotiate the many regulations that apply to their building portfolio. The spread sheet lists all the tests, checks, and inspections that are required on their specific building, services, and systems required by legislation, Approved Codes of Practise and/or supporting guidance.

The spreadsheet is organised by task. For each task (test, check or inspection), the following information is provided:

- System
- Asset
- Minimum required frequency
- Skill level or qualification required
- Recording and record retention period
- Legislation requiring the task to be carried out
- Approved Code of Practice, guidance document or standard giving details of the task

6.2.1 Price

A digital download is available for £80, or N/A fee for BSRIA members.

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