

Fire Damper Service



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Part 1 **Fire damper compliance** [pages 1 - 4]

1. What are fire dampers ?
2. Why do fire dampers need to be tested?
3. Who is responsible ?
4. Best of practice

Part 2 **fire damper service** [pages 6 - 11]

essential fire services specialises in fire damper compliance, helping you keep your building occupants safe. Our services include surveys, commissioning, routine maintenance and remedial works.

essential fire services uses the essential vault software application to offer comprehensive reporting and asset management.

Part 3 **essential vault** [pages 14 - 21]

essential vault is our advanced asset management software application used to gather asset data and generate a service report.

The vault service centre provides management insight and tracking tools for service and remedial requirements helping maximises your building safety and guide your building to compliance.



1. What are fire dampers ?

Fire dampers are part of a building fire safety system, designed to prevent the passage of fire through a compartment wall or floor. Fire dampers form part of a building ventilation system and are installed where air handling ducts pass through fire-separating elements such as compartment walls or enclosures protecting escape routes.

Typically, a fire damper is a metal curtain within a duct held up by a thermal element (referred to as a fusible link) and released in the event of a rise in temperature. The thermal element will melt at a set temperature releasing a spring-operated metal curtain, which is pulled down to fill the opening the duct passes through, preventing the passage of fire.

Smoke dampers are automatically operated once triggered by smoke detectors. The smoke damper will open or close to prevent or allow the passage of smoke.

Fire and smoke dampers are key to the control and containment of fire in the event of an emergency. By providing a barrier which fire and smoke cannot pass, these assets play a critical role in the fire safety system within any building.





2. Why do fire dampers need to be tested?

All fire safety systems must be maintained in an efficient and effective state. Fire and smoke dampers form part of the fire compartmentation system to contain and control the spread of fire through a building.

Fire dampers are subjected to constant air flow through the building ventilation system. Routine inspection is required to check for signs of corrosion, obstruction, or accumulation of dirt & dust, and testing is required to confirm the damper still opens and closes effectively reducing the risk of a fire compartment failing.

The routine inspection, testing and maintenance of fire dampers is required in accordance with British Standard 9999 Annex W.1.

British Standard 9999:2017 Code of Practice for Fire Safety in the Design, Management & Use of Buildings states that:

bsi. Annex W.1. “Arrangements should be made for all fire dampers to be tested by a competent person on completion of the installation and at least annually, and to be repaired or replaced immediately if found to be faulty. Spring-operated fire dampers should be tested annually, and fire dampers situated in dust-laden and similar atmospheres should be tested much more frequently, at periods suited to the degree of pollution”.





3. Who is responsible?

Under The Regulatory Reform (fire safety) Order 2005 the responsibility for a facility's fire safety system falls on the organization's "responsible person". Typically, that responsible person is the employer, or the owner of the facility. If you are a building manager or owner, you have a duty of care to staff, employees and visitors to provide a safe environment.

RRO 2005 states: -

The responsible person must -

- ensure that the premises are designed, constructed and maintained so as to reduce risk;
- ensure that suitable special, technical and organisational measures are designed, constructed, assembled, installed, provided and used so as to reduce risk;
- ensure that special, technical and organisational measures are maintained in an efficient state, in efficient working order and in good repair;

As fire damper test and inspection technicians we become a responsible duty holder of the report content which must be a truthful reflection of the fire damper(s) condition throughout a building.

All our damper inspection and testing is carried out by trained and competent individual(s). Our damper technicians will follow best of practice guidance contained within NAAD-22 [Fire Dampers] standards, and other relevant sources such as BESA DW/145 and VH001 guidance documents.



4. Best of practice

The National Association of Air Duct Specialists UK [NAADUK] has developed the most comprehensive guidance documents available for indoor air quality and fire damper servicing, installation, and design. Working with various other association bodies they strive to continually improve industry standards by enhancing training, development and awareness across the country for this critical fire safety system.



NAAD-21 – AIR (Indoor Air Quality) - Regulation Guidance standards for Indoor Air Quality in occupied zones

NAAD-22 – Fire Damper guidance document for ‘Routine Maintenance, Testing & Inspection’.



Other relevant laws and standards apply to the installation and maintenance of fire dampers:

- **ASFP** – The Grey Book – Volume 1: EN Fire dampers
- **BESA DW 145** – Guide to Good Practice for the Installation of Fire and Smoke Dampers
- **VH001** – Technical Bulletin – Technical guidance on Fire and Smoke damper maintenance

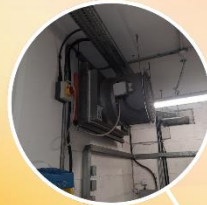


essential fire services specialises in fire damper compliance, helping you keep your building occupants safe

 **Routine Maintenance**

 **Commissioning**

 **Remedial Works**





Fire Damper Survey

The first step towards fire damper compliance is a survey to seek and identify what you have within your premises. Surveys can be carried out using ventilation schematics and/or building plans or carrying out a inspection of your premises (mostly both).

The purpose of a survey is to generate an asset register or an estimation of the number of fire dampers at your premises, whilst also assessing the general accessibility of the dampers.

Once the survey is carried out the information gathered will be used to generate a quotation for a full inspection and testing service.

Ventilation schematics?

Most modern commercial and industrial premises come with detailed ventilation layout schematics which illustrates all the ducting components such as fire and smoke dampers, and volume control dampers.

Our technicians are very experienced in navigating around a building using the ventilation schematics or building floor plans and can either work with printed copies (originals will be returned) or digital copies.

Do not have Ventilation schematics or out-of-date?

No problem... Ventilation schematics are a very useful tool to have available when carrying out a survey, however many older buildings no longer have copies of their schematics or have undergone refurbishment works or alterations which have altered the ventilation and compartment layout.

Essential technicians are very experienced in the seek and location of dampers. Either by tracking the ductwork routes from AHU source or locating fire compartments which have ductwork penetrations, our technicians can generate a portfolio of your damper assets.

How intrusive is the survey?

Assessing the general accessibility of the fire dampers throughout a building is one of the main objectives in a survey. Fire dampers are normally tucked away in ceiling and riser voids requiring ladders and/or removal of obstructions, however our technicians will never cut into duct work or building fabric to check for fire dampers. Should a fire damper be visible or illustrated on the ventilation schematic but not accessible, they will be recording on the asset register and recommended actions detailed within the service report.

What happens after the survey is complete?

Once the survey is carried out the information gathered will be used to generate a quotation for a full inspection and testing service.



Inspection and Testing [routine maintenance and commission]

BS 9999:2017 states: “arrangements should be made for all fire dampers to be tested by a competent person on completion of the installation and at least annually, and to be repaired or replaced immediately if found to be faulty ”

Our damper technicians will carry out an intrusive survey of the building within the agreed parameters and endeavor to locate and service all dampers. Should a ventilation drawing be provided, our technicians will update and annotate details of any extra findings. An asset register will be generated for all dampers located, along with a summary of test results and photographic evidence of inspection details and operational test.

Firstly, when a damper is located the technician will assess the safest means of access for inspection and clear any obstructions (within reason). Should there be an accessibility issue or obstruction preventing access these will be recorded as required remedial actions.

BS 9999:2017 states: “Adequate means of access should be provided to allow inspection, testing and maintenance of both the fire damper and its actuating mechanism.”

To reach fire damper compliance each damper must be inspected, and a drop test carried out. The first step in the fire damper test procedure is a visual inspection. It is the responsibility of the technician to carry out a ‘detailed’ inspection of the damper installation, assessing if it has followed the manufacturer installation details and best practice guidance. The visual inspection is carried out on the damper to ensure the following:

- Correct damper frame used to secure the damper position and integrated with the fire barrier compound.
- Installation is at the correct orientation.
- Transit tape over the fuse link has been removed and fusible link or bar is in good condition, with no visible signs of damage or solder decay.
- All galleys are clear from obstructions and springs are mounted securely and not twisted.
- No serious signs of corrosion on damper frame casing or adjacent ductwork.

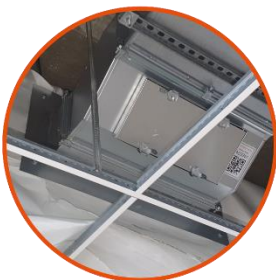
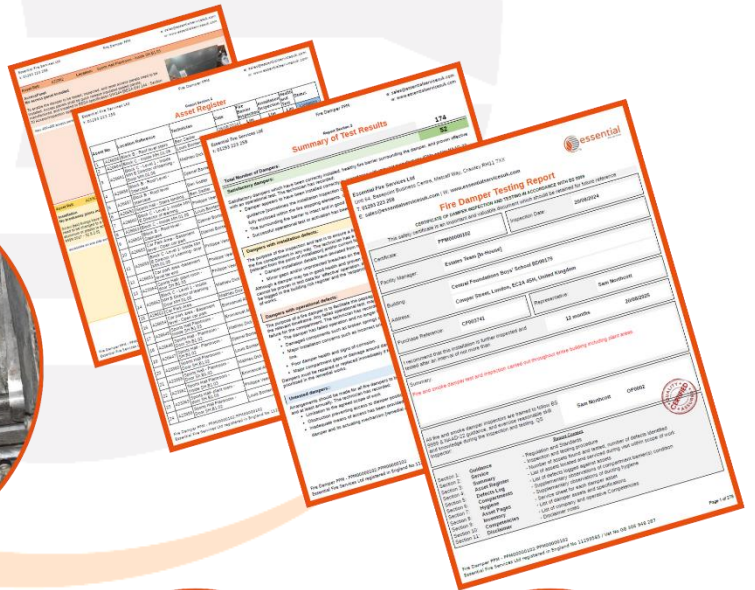
BS 9999:2017 states: “To ensure that the damper will not be displaced by movement or collapse of the duct, dampers should be securely fixed and provided with breakaway joints in accordance with manufacturer’s instructions.”





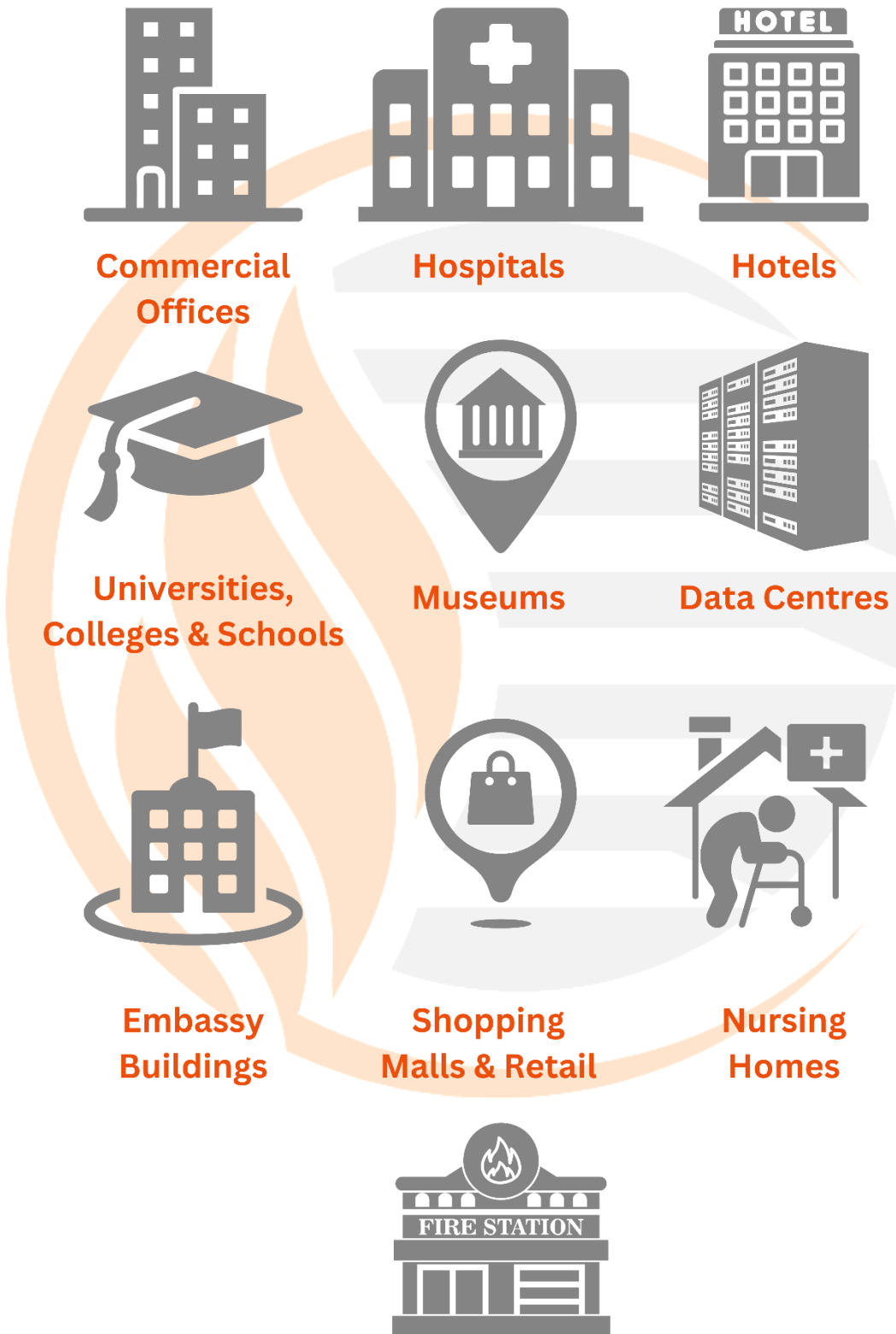
Many faults or defects can be identified during the initial inspection. Should there be an accessibility issue, obstruction, or damage to the damper, these will be noted as required remedial actions. Once all visual inspections are complete and satisfactory, a drop test can be carried out. During a fire damper test the technician will:

- Manually release the fusible link and allow the curtain to drop into the closed position.
- Ensure the damper curtain closes fully, visually checking that the bottom curtain blade locks onto the locking-ramp.
- Damper will be cleaned if required (and lubricated if advised in manufacturer maintenance manual)
- Damper shall then be opened and re-set, ensuring the bottom blade remains parallel with the top of the damper.
- Photographic evidence will be taken of the damper in the 'as found' position, close position and reset position.





Experience in delivering fire damper compliance services





Other Supplementary Observations

Our damper technicians will also carry out some additional observations of the wider compartment condition and duct cleanliness as these factors will also impact the damper performance and effectiveness.

As part of a damper inspection the technician will carry out an inspection of the fire barrier. The fire barrier inspection is generally limited to the immediate proximity of the damper position; however, as a fire damper is there to protect the fire compartment as a whole [whilst facilitating the passage of ventilation services], the technician will record any concerns or observations of the wider compartment condition and suitability [to the best of their knowledge]. NAAD-21 states “If a technician spots any breach in a partition of a compartment, they are legally obliged to report it”.

Ventilation systems control the air that we breathe inside buildings. The quality of the air can be influenced by maintenance or lack of and the local environment. In many cases BS9999 has recognized that heavy build-up of dust and debris with the system can be a fire risk. Our technicians will also assess the general cleanliness & hygiene of the duct at each damper location.



4.3 SYSTEM CLEANLINESS AND ITS EFFECT ON FIRE DAMPERS

Cleanliness levels play a key role in the functionality of fire dampers, as heavily laden and contaminated ductwork can allow the fire to spread through the compartments before the fire damper has the chance to reach activation temperature. Even then the fire might have the opportunity to pass through the fire damper if it cannot lock into the locking guides correctly.



This ductwork (pictured) will not allow the damper to function in the correct manner and will not contain the spread of fire between compartments.

Fig No. 2— Damper Cleanliness

NAADUK recommends the Imperial College London Vacuum Test Sampling method to be conducted as part of the fire damper testing regime to place scientific UKAS accredited results for the dust contamination levels. This testing provides fact based scientific results that partners the photographic evidence.



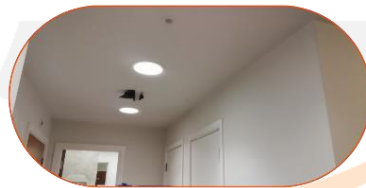
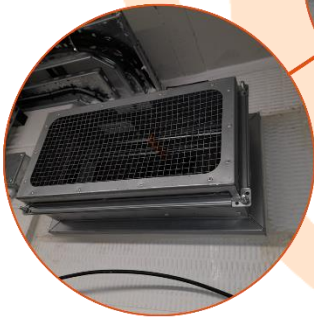
Remedial Works

Upon completion of your annual inspection and testing your report may highlight some installation and/or operational defects with dampers which will require remedial action.

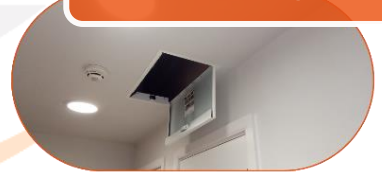
If any damper is found to be faulty, our technicians will discuss remedial options with you, and will issue a quotation for remedial works along with the service report detailing the defects.



Our servicing team found this damper with a HEVAC expansion frame installed in an ablated batt fire barrier, meaning the damper had no mechanical supports or mounting plate to integrate into the barrier. Fire dampers are design and tested to operate in conjunction with specific fire stopping elements. If an unsuitable fire stopping compound is used to seal the compartment penetration point or incorrect damper frame installed, it cannot be verified in test data as an 'effective'



Ceiling hatch installed to facilitate access to a fire damper.



Installation of access panel to inspect the internal components of the damper and witness a drop test.





The Golden Thread

As part of the golden thread initiative, it is important that a test and inspection report is issued upon completion of a fire damper service and stored for future reference at any time. This document contains important information regarding the safety of the building and its occupiers/residents and must be made easily accessible in digital format.



essential
vault

essential vault is an advanced asset management software application specialising in fire damper routine inspection and testing

essential vault offers a comprehensive end-to-end workflow solution to ease the administrative burden and allowing you to focus on your customer needs





essential vault

essential vault offers a suite of features to manage the complete workflow process of fire damper routine maintenance and remedial service. From scheduling jobs, gathering asset data, managing asset defects to PDF reporting.



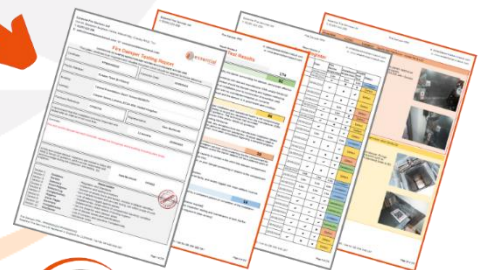
Efficiency



Scalability



Productivity

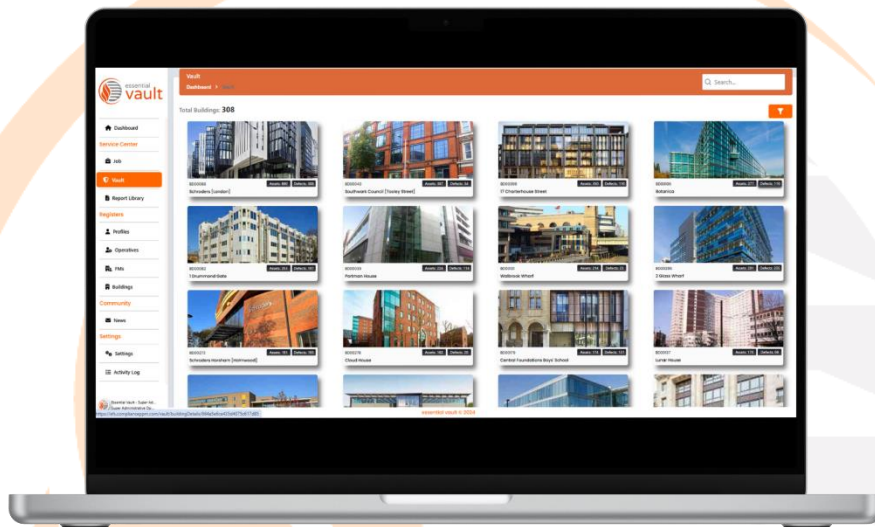


essential vault dashboard gives you a great overview of your business and a clear insight into your upcoming schedule and job status

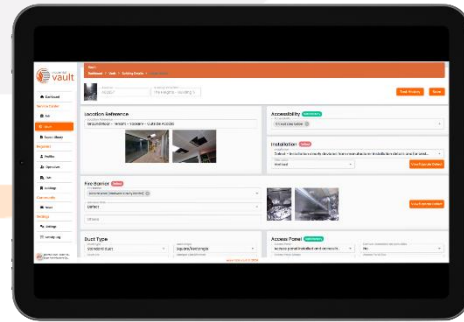
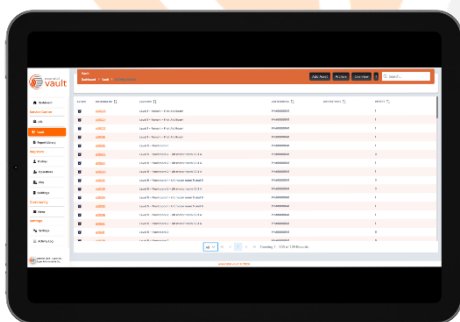


Service Centre

essential vault allows you to navigate through your portfolio of buildings and manage your asset data.

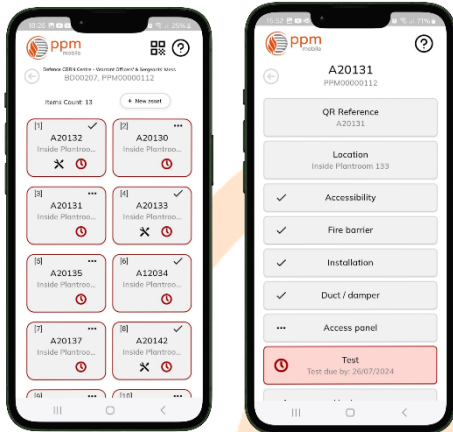


the essential vault 'core' asset database gives you complete management over your asset data, to view and update asset specifications, testing history and defect logs



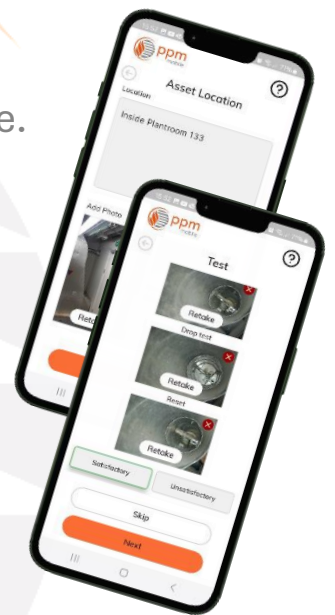


essential vault mobile application 'mobile ppm' enhances site efficiency and productivity, providing clear assignment details to site operatives

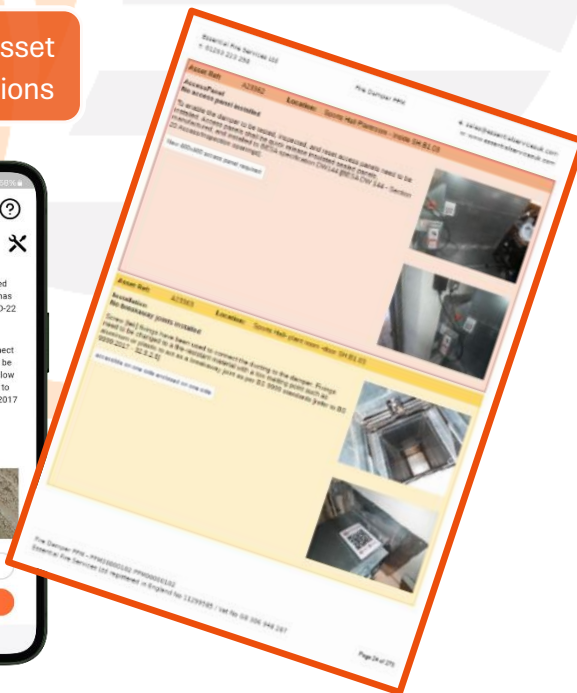
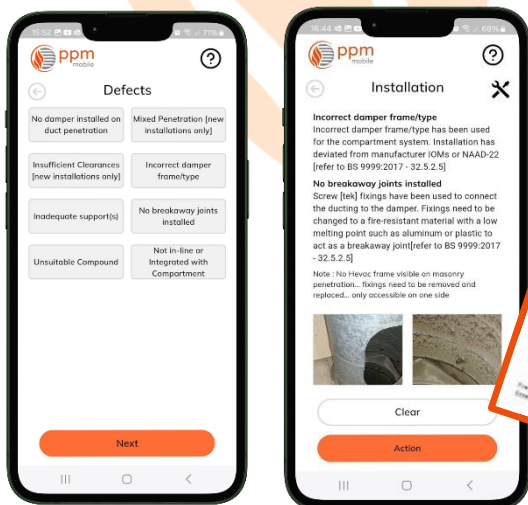


mobile ppm gives your fire damper site technicians the perfect tool to collect asset data, log asset defects and provide their technical input. Helping to keep your customers safe and guide them towards compliance. The mobile ppm UI flow has been designed by experienced

fire damper fields technicians to enhance the experience with a logical and natural end to end flow when collecting asset data and logging defect



Site operatives can log and manage asset defects for reporting and remedial actions





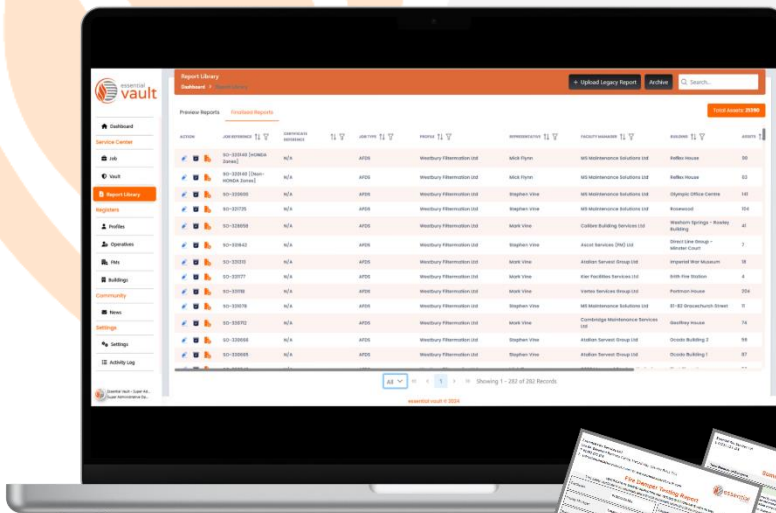
Administrators can create, schedule and assign jobs to mobile site operatives.

Job management

scheduling jobs has never been easier with the essential vault UI... giving you the overview you need... and giving your site operatives a clear & easy access to their job assignment details



Reporting library



Report library automatically updates with new reports and allows users to upload legacy reports





Registers

essential vault provides business management registers for client profiles, operatives, facility managers and buildings

Profile register



Administrators can setup profiles for branded PDF and UI interface

Operative register

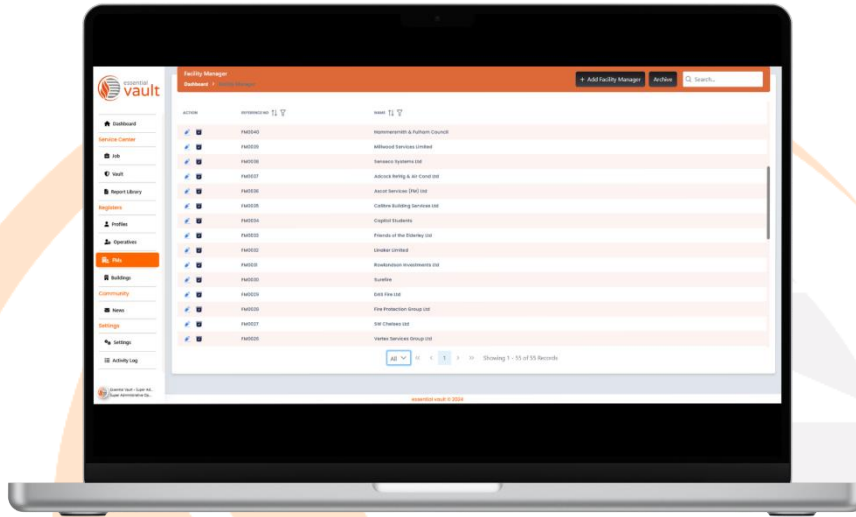


Manage site operatives details, jobs and competency records



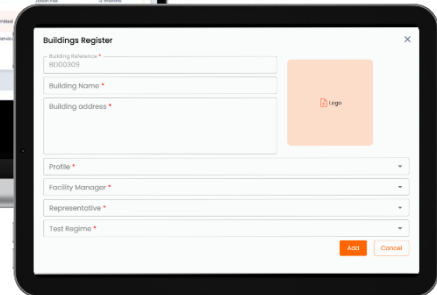
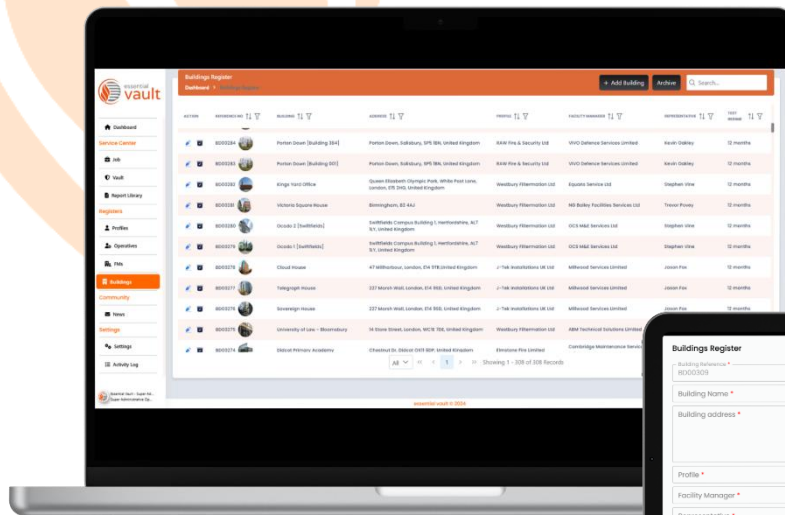
essential vault gives you the tools to build your business registers in a centralized dynamic platform... making administration easier... managing your customer details, your business compliance... and team competencies

FM register



Manage your client base of facility managers

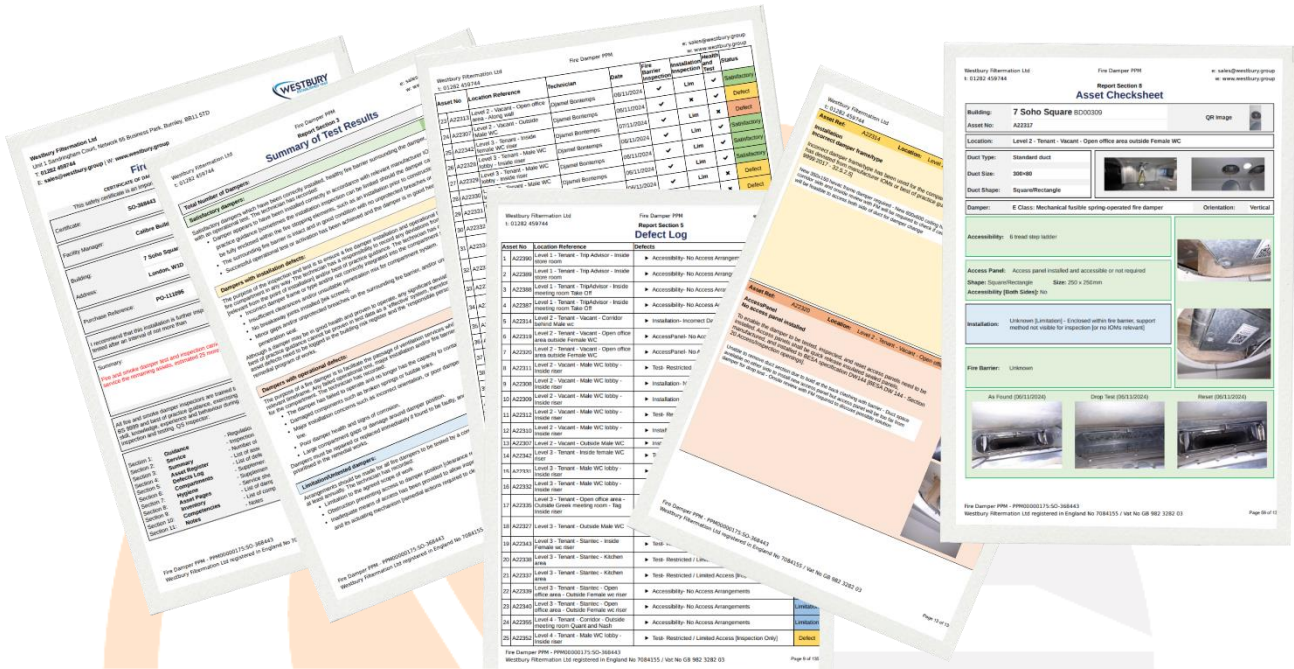
Building register



Manage your portfolio of buildings and assign a testing regime

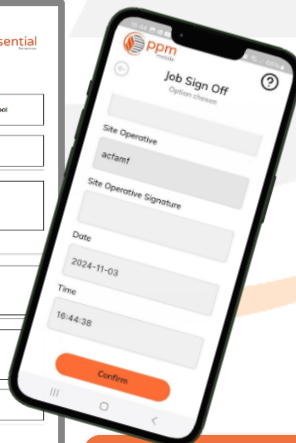


Reporting



Comprehensive automated fully customizable PDF reporting

Worksheets



Site operatives can close and sign off jobs with clients for automated PDF worksheets



Easing the administrative burden of producing a compliance report is the core purpose of the essential vault software package, providing the management tools to customise and brand your reports whilst easing the weight of day-to-day business administration

**automating for efficiency and streamlining
for productivity!**

essential vault aim is to provide the full business operating solution, providing the tools for the end-to-end workflow of fire damper maintenance, estimations and remedials works... freeing each business to focus on the core service

Book a FREE demo

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