

RETIREMENT HOME LIFT PIT CASE STUDY



THE PROBLEM

Lifts are among the very few forms of transport available for continuous and unsupervised use by all the persons, often in locations where the presence of vulnerable groups (e.g. hospitals and care homes) and other logistics (e.g. large multi-level developments) dictate that they are key in providing and sustaining safe and unimpeded accessibility throughout buildings, for all stakeholders.

British and European Standards form strict and comprehensive safety requirements, both upon the construction of lift pits (BSEN8120) and their subsequent usage and maintenance (BSEN8150), and a duty of care imposed upon lift owners and managing agents makes it a legal requirement to ensure that lifts and lift pits are maintained to a safe standard.

Crownstone were called in by a nationwide residential care home and retirement flats manager to provide a solution to the problem of their perennially flooding lift pits. When our experts arrived, vulnerable residents had been confined to the upper floors of one development for 8 weeks, posing major health and safety risks and impeding access for medical and domiciliary care.

The flooded lift pit had resulted in the lift having to be deactivated: the development's Public Liability insurer had, as is standard practice within the commercial insurance sector, refused to cover any liabilities incurred by the lift's operations, whilst water remained in the pit.

As people in property know, when it comes to lift pits, water can't just be pumped out with a 'business as usual' approach: strict environmental controls are in place under the Environment Agency's Pollution Prevention Guidelines to monitor the disposal of oils and liquid hydrocarbons into the wider drainage system. Under the Environment Agency's PPG3 it is stipulated that oil separators 'must' be deployed to 'protect the environment against pollution by oils' and furthermore, during the pit design stage, consideration should be made for access for regular maintenance to be provided to the oil separator, in accordance with BSEN8150, the British and European Standard for lift pit maintenance. Failure to adhere to the EA's PPG3 guidance can result in hefty fines, both for contractors and lift owners and managers: this, in turn, has led to the worrying trend of pumps being removed from lift pits, as managing agents grow increasingly concerned about the risk water becoming contaminated by hydraulic oils. The result? The application of cementitious systems (Type A in negative pressure) which will invariably fail in high risk, high pressure environments.

Furthermore, recent calls for lift pits to be covered under the requirements of BS8102: 2009 (The British Standard Code of Practice for the Protection of Underground Structures against Water from the Ground), have complicated the matter further. Under the terms of BS8102: 2009, a lift pit, housing environment-sensitive mechanical and electrical equipment, would be classified as a 'Grade 3' environment, meaning that 'no dampness or water penetration is acceptable': consider a lift pit in the highest risk environment, for example, an alluvial soil where water permeation prevails, and it is clear that a traditional single-strain waterproofing technology is simply not able to tick all the boxes.

THE PITSAFESAFE™ SOLUTION

In response to the multi-faceted and challenging requirements, Pitsafe™ was born.

As independent designers of waterproofing systems, Crownstone drew on 20 years of structural waterproofing experience, as well as an unparalleled knowledge of manufacturers and products, to create not only controlled movement of water through the structure, but a separated means of oil escape.

Crownstone's innovative combination of chemical and membrane solutions engineered a BS8102: 2009 -compliant environment for the housing of sensitive electrical and mechanical equipment, whilst completely eliminating the risk of pumping oil into drains.

In leveraging a complex interplay of Type A and Type C waterproofing systems, Pitsafe™ offers lift owners and managers unprecedented peace of mind in knowing that, by completely eradicating the risk of water coming into contact with the mechanical workings of the system, commercial Public Liability insurance requirements, as well as overarching British Standards, best practice and environmental legislation can all be met.

By creating self-contained and accessible units for the direct management of both permeated water and hydraulic oils, Pitsafe™ ensures that the demands for maintenance under BS8102: 2009 and BSEN8150 are not only adequately met, but proactively facilitated.

THE RESULT

Water and electricity are a potentially lethal combination – if water is allowed to enter an area that contains essential pieces of the lift gear and other electrical items, the situation is dangerous, to say the least. Even in less serious situations, vital lift parts can corrode, leading to costly and time-consuming repairs and replacements.

By deploying Pitsafe™ technology, moisture and mechanics can be effectively distanced, reducing costs and operational downtimes, whilst improving user reliability and ensuring that health and safety risks are minimised.

Pitsafe's™ innovative design allows lift owners and managing agents to meet their legal requirement to ensure that lifts and lift pits are maintained to a safe standard, whilst placing the environmental risk of managing waste oil back into the hands of the qualified professionals.

Furthermore, in its forward-looking approach to lift pits as 'mini-basements' (under BS8102: 2009), the Pitsafe™ design ensures that lift owners' and managers' maintenance plans are effectively future-proofed against upcoming shifts in lift pit compliance and legislation.

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**IT'S GOOD TO FINALLY HAVE
A SOLUTION TO LEAKY LIFT PITS.
GILES BRENNAN
DIRECTOR, EMERALD ELEVATORS**

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**THANK YOU FOR PROVIDING A
SOLUTION NOBODY ELSE COULD.
DARREN BOYD-PREECE
HEAD OF MAJOR WORKS, FIRSTPORT**