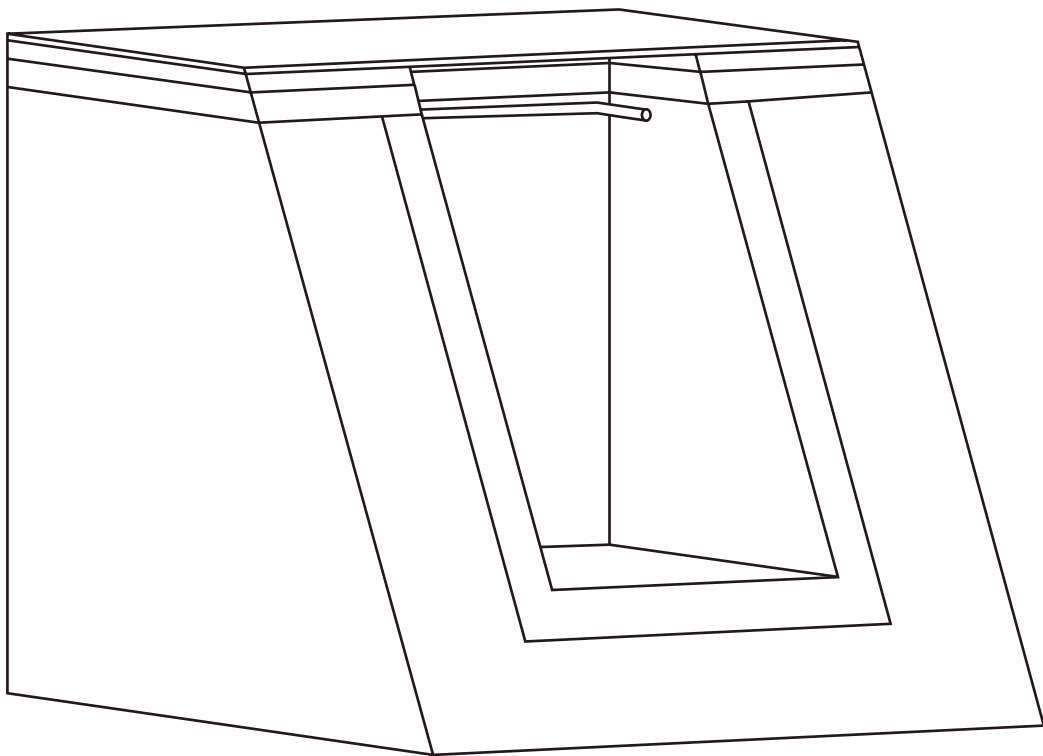




future automation

PIT

IN GROUND GUIDELINES FOR TV LIFT PIT DESIGN



DESIGN GUIDE

ISSUE 001

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INTRODUCTION

This document outlines best-practice guidance for integrating Future Automation mechanisms into pit-based installations and associated structural works. The information provided offers general design and construction recommendations only. It does not replace, interpret, or override any local, national, or international standards. All statutory obligations, building regulations, and relevant industry standards must be followed in full, irrespective of the guidance contained within this document.

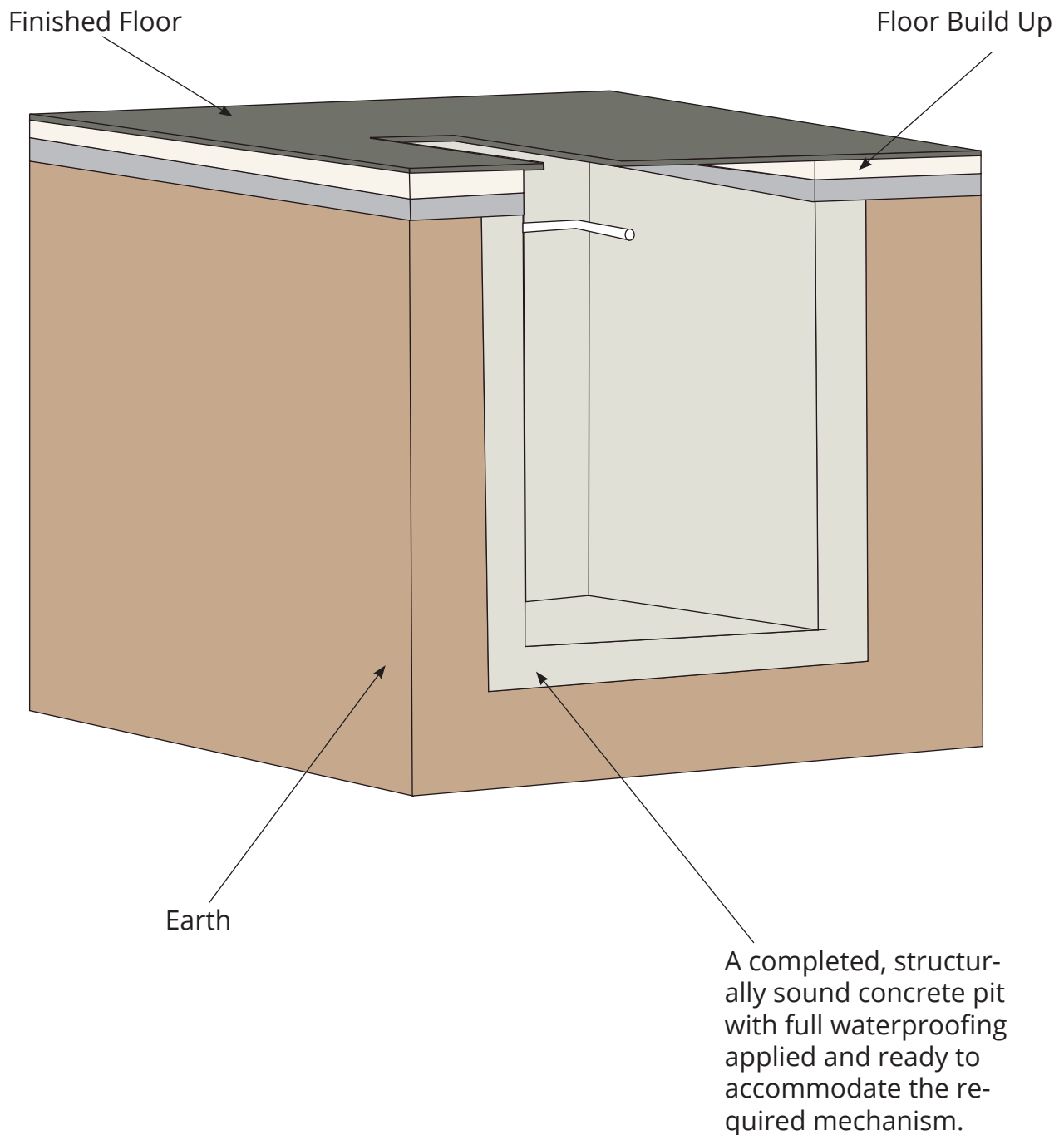
This document is intended for use by designers, builders, fabricators, and installers involved in the planning, construction, and installation of pits or recessed spaces that house motorised AV mechanisms.

The guidance in this document establishes minimum considerations for safety, structural integrity, and pit construction. It is intended to support the safe and dependable integration of Future Automation mechanisms into pit designs but does not replace professional judgement, manufacturer instructions, or regulatory requirements. Where conflicts arise, manufacturer documentation and all applicable regulations must take precedence.

Responsibility remains with the designer, builder, and installer to ensure each pit installation is safe, compliant, and appropriate for its intended use.

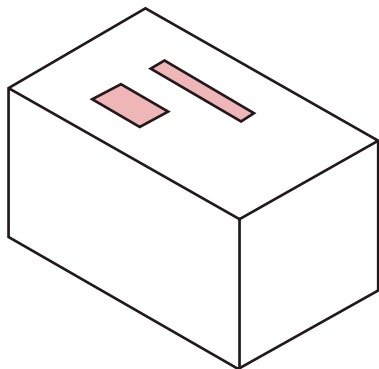
OVERVIEW

This section shows an example of how to build a pit for a TV lift. This gives an example of how a subterranean pit for a lift mechanism should be constructed. Internal dimensions for pit should be determined from product specific tech sheet/s. All measures should be taken to prevent excess water ingress into the pit.



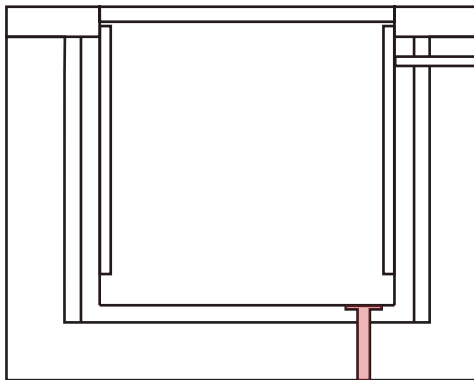
KEY DETAILS

PREVENTION OF WATER INGRESS



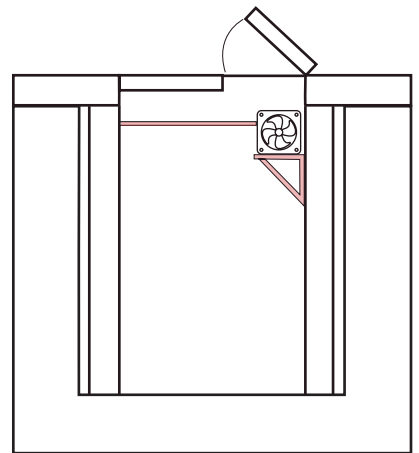
Every effort should be made to reduce the amount of water that can enter the pit.

DRAINAGE



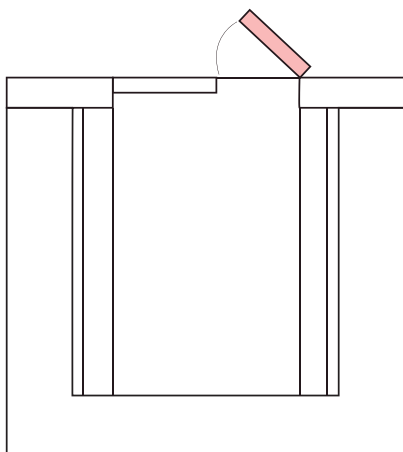
Included suitable drainage to manage any water that enters the pit. The level of the water table needs to be considered in order to decide on the type of drainage.

HUMIDITY CONTROL



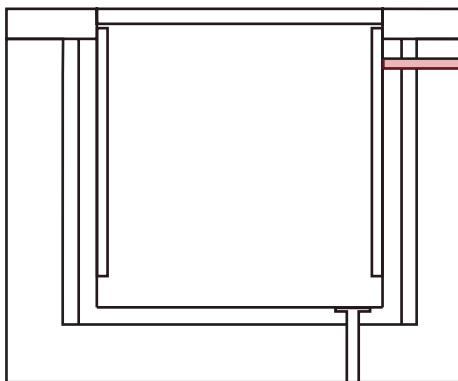
Condensation of water in the air can accelerate corrosion. Therefore, the pit should have some form of dehumidification to reduce the airborne water.

ACCESS



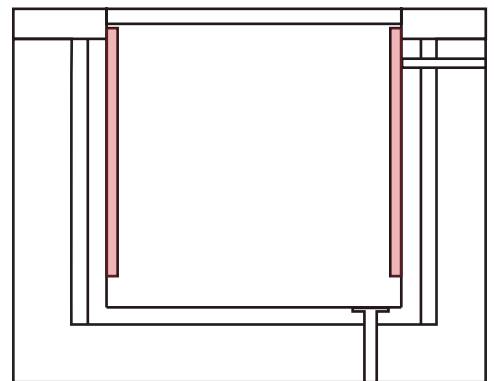
The pit should have good access to help with installation and servicing in future. This could be a removable panel or a trap door style entrance, or whatever is suitable for the particular site scenario.

WIRING



Cables to the mechanism will need to be run through appropriate conduit into the pit.

MOUNTING



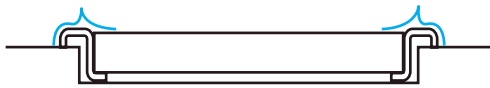
Provide a robust and flat surface for fixing mechanical elements to.

PREVENTION OF WATER INGRESS

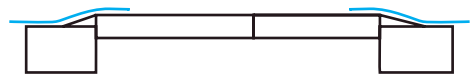
Pit should be designed to BS 8102:2022 standards. Future Automation suggest the appointment of a waterproofing specialist early within the project to provide professional advice.

Pit Cover Design

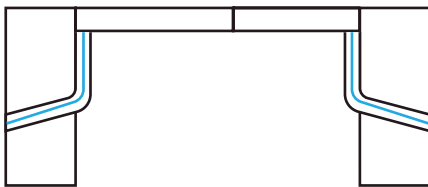
- Gasketed perimeter seal
- Raised lip/overhang to shed water
- Drip edge on all sides
- Optional drainage channel integrated into frame



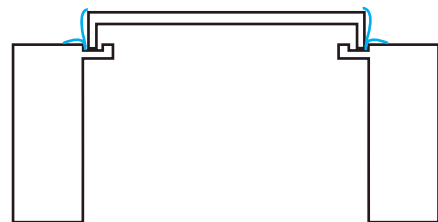
Rubber Gasket



Overlap lid



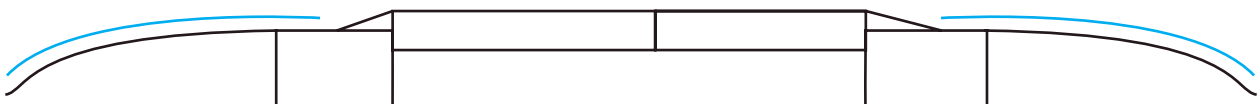
Water channel



Drip edge

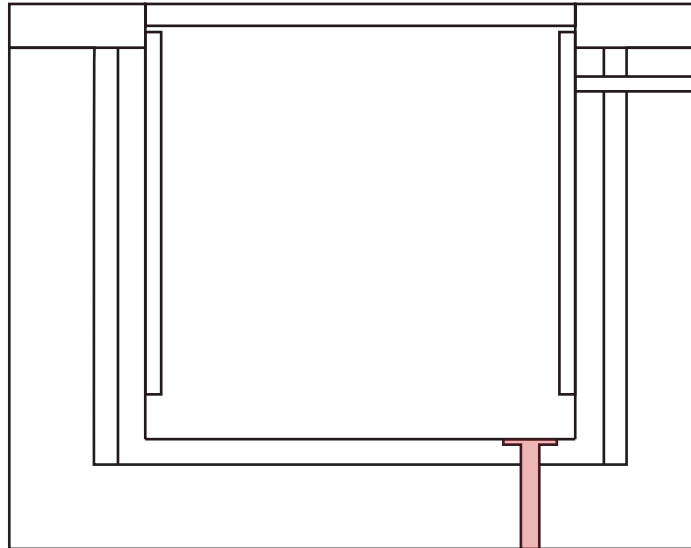
Ground-Level Protection

- Grade surrounding ground to fall away from the pit
- Avoid water pooling or surface runoff toward pit lid

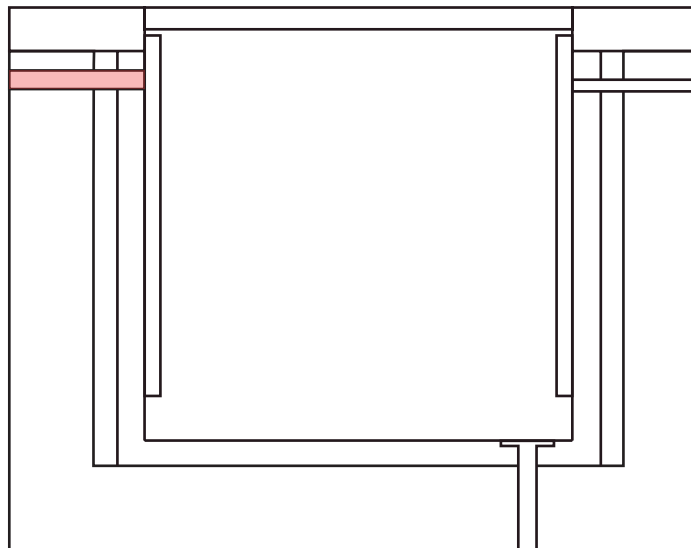


DRAINAGE

First it is important that every effort is taken to prevent water ingress. However, it is inevitable that some water will be present inside the pit. To prevent this building up to an unsafe level, there should be considerations for drainage inside the pit. Base of pit should include adequate drainage.



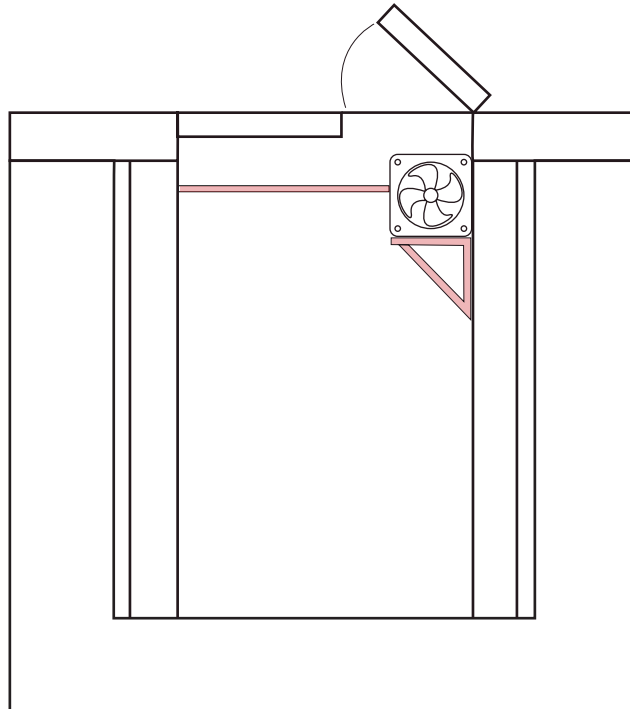
- Drainage should not be into a soak away directly below pit, but a dedicated drainage pipe to take water away from the pit.
- Floor of pit should have slight fall towards drain location. Base drainage is only available if main sewer level is low enough compared to base of pit.



In areas with a high water table, additional elevated drainage from the pit may be necessary. To achieve this, a bilge pump should be installed to remove water from the base of the pit and discharge it into the high-level drainage system. The pit floor should be constructed with a slight fall directing water toward the bilge pump location.

HUMIDITY CONTROL

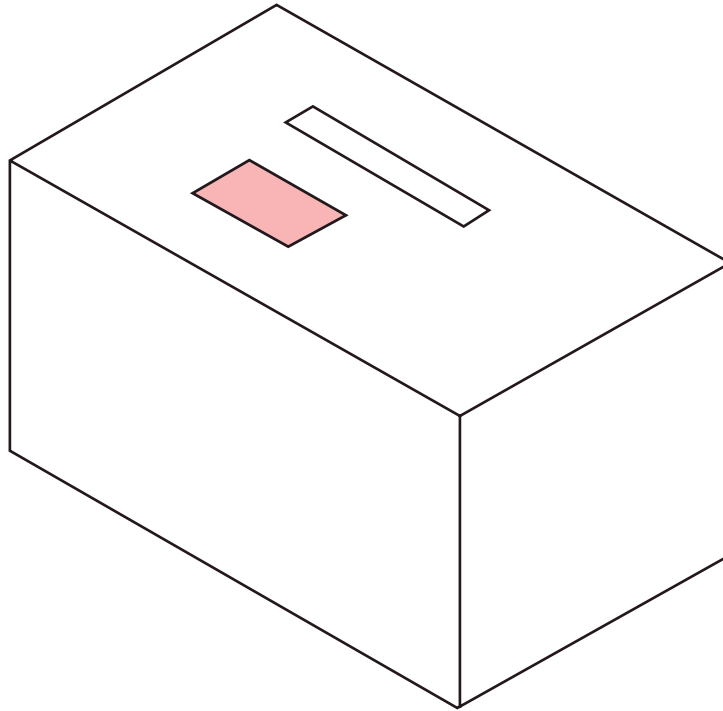
It is important to control the humidity levels inside an in ground pit. Moisture build up from condensation can accelerate corrosion with mechanism operation and functionality.



- It is recommended that subterranean enclosures have a dehumidifier fitted inside. Even if measures are taken to prevent water ingress, condensation forming can cause problems.
- Exhaust air (damp) from dehumidifier must be vented out of the pit. Length of ducting run should be kept to a minimum (ideally 5m max). Duct end needs appropriate protection / capping from pest and water intrusion.

ACCESS

Safe and reliable access to the pit is essential for installation, maintenance, and emergency servicing. The access design must ensure that any technician can enter the pit safely without risk of entrapment, falls, or obstruction. If mechanism retracts into multiple use space, the mechanism must be enclosed to prevent damage or injury.



Minimum Requirements:

- Provide a dedicated service opening of at least 500 × 500 mm.
- Access opening must be load-rated if it forms part of a floor surface.
- The opening should allow removal of the lift mechanism if required.

Access Methods:

- Trap-door style access panel integrated into decking, flooring, or exterior landscaping.
- Side access panel (if pit design allows) for horizontal entry.
- Removable section of cladding or furniture for indoor cabinetry integrations.

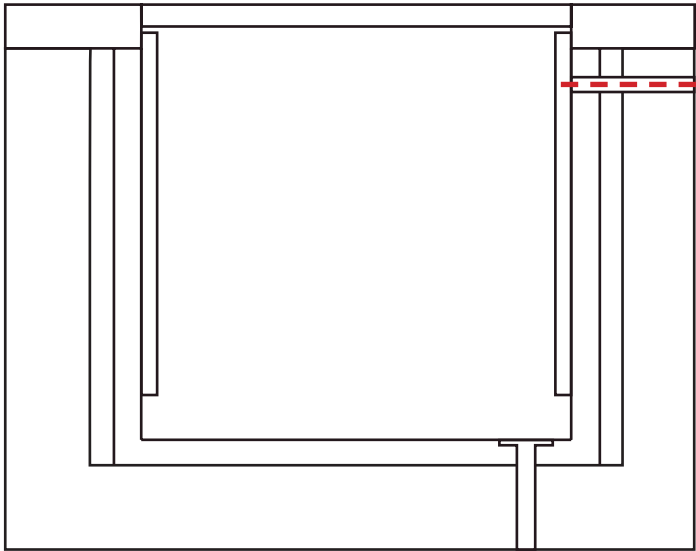
Safety Considerations:

- Access point must not obstruct mechanism movement.
- Opening must provide unrestricted visibility before entering.
- For deeper pits (>1.2 m), include a permanent or removable ladder.
- All access covers must be securely fastened to prevent accidental opening.
- Water ingress measures also apply to access.

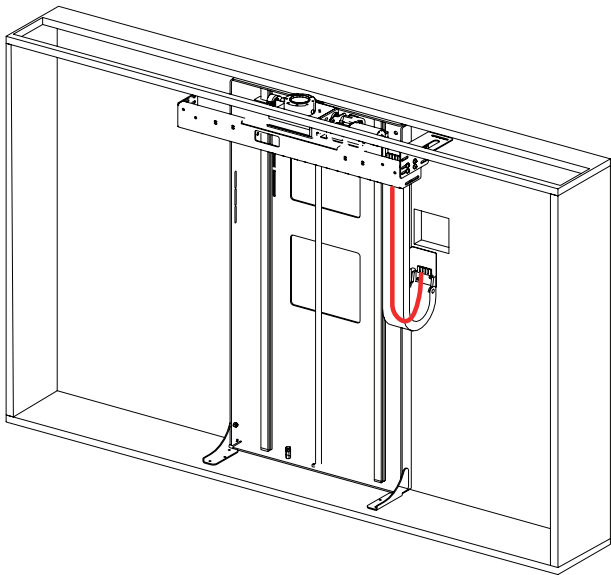
WIRING

If the control box is located inside the pit, only mains power and control (e.g RS232) cables will need to be run. If the control box is located outside the pit then the mechanism wiring loom will need to be ran out through conduit to the control box location as well.

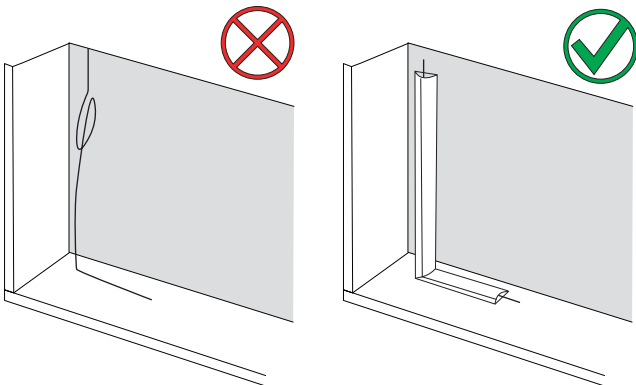
- Conduit must be fixed, sealed, and free of water entry points
- Use IP-rated gland fittings
- Avoid routes that cross mechanism movement paths



Considerations:



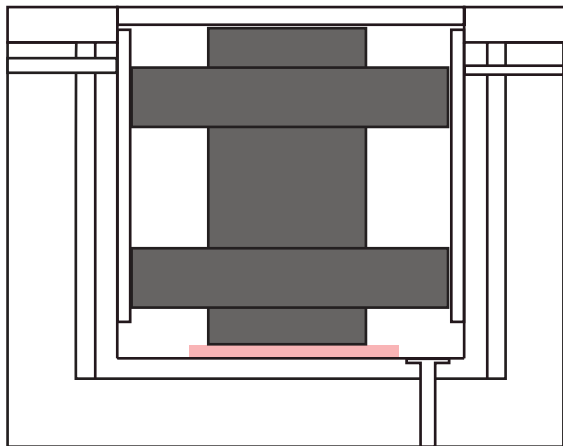
Use defined routes and keep clear of moving parts.



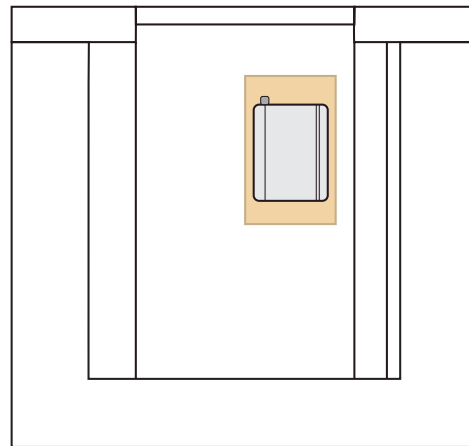
Secure all cables and protect them in conduit.

MOUNTING

Stud wall structures must be provided as a usable surface for fixing mechanical elements to. Also provides cavity / route between pit and above surface.

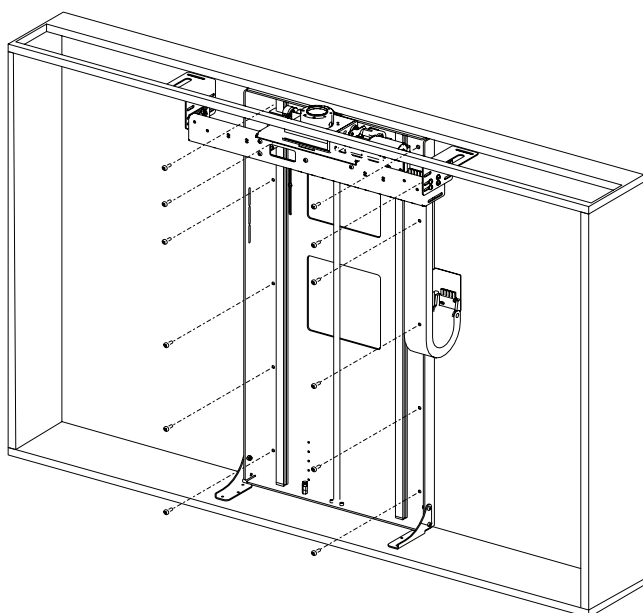


If the pit is **outdoor** then pack lift off the floor by 50mm to prevent mechanism from sitting in water.

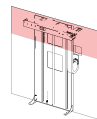


A suitable mounting surface must be provided to allow the mechanism control box to be installed without obstructing the operation of the mechanism. If the control box is mounted on the pit wall, it should be spaced off sufficiently to prevent water from running onto the top of the unit.

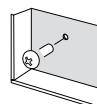
Mechanism Mounting Considerations:



Use all available fixings (where possible).



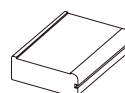
Mandatory fixings in top 25%.



Fix into pattress.



DO NOT omit upper fixings.



Keep control box out the way of mechanism.



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