

## DESIGN AND SUPPORTING STATEMENT

*Application Site:* **12 Virginia Street, Aberdeen**  
*Application Description:* **Installation of Flood Mitigation Doors**  
*Date:* **March 2024**

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### Background

Bell Ingram is applying for planning permission and listed building consent on behalf of Scottish Water for flood mitigation doors. Scottish Water has a duty to remove foul and surface water from within the curtilage of properties, and also to protect them from sewer flooding.

In some areas however sewer flooding occurs during periods of heavy rainfall, causing significant damage to building fabric and contents when it enters a property. Scottish Water can install flood mitigation measures, including floor doors and barriers, for customers in these locations. These measures can provide immediate protection against repeat events, significantly reducing potential for damage to buildings and the contents.

The flood doors that Scottish Water install and maintain for their customers are designed and manufactured in the UK by Stormeister, a company which specialises in flood protection devices. Scottish Water has been successfully installing Stormeister uPVC flood doors in high-risk areas for over a decade, including properties that are located within conservation areas and listed buildings (including Limekilns in Fife, Union Street Conservation Area in Aberdeen, Greenhill Place in Edinburgh and Inverleith Row in Edinburgh).

When sewer flooding occurs during heavy rainfall events in this area of Aberdeen, it travels overground and enters buildings via external doors which front onto public roads and footpaths. Buildings in this part of Aberdeen have been flooded internally on multiple occasions since 2020. Ongoing investigations are therefore being carried out to establish the cause of the flooding and Scottish Water has also agreed to install flood doors and barriers to the properties affected, with the customer agreement, to help protect against future flood events.

## **PROPOSED DEVELOPMENT**

The proposal is to replace 3 existing external timber doors with 3 new uPVC flood mitigation doors at 12 Virginia Street. A rapid assembly flood barrier would also be installed in front of the roller shutter vehicle access doors. The attached photographs show the existing doors which front directly onto the edge of the pavement. The commercial warehouse is located within the City Centre Conservation Area and a listed building, these proposed alterations therefore require planning permission.

The proposed flood doors have an 'Active Flood Seal' mechanism which significantly reduces the risk of internal flooding. The mechanism is activated automatically during any flood event and is not dependent on human intervention. The proposed replacement doors are steel-reinforced uPVC. The style of the doors would replicate the existing No.1 and 2 flat panel doors, No. 3 panels moulding) and finished in RAL violet blue to match the existing. The proposed flood barrier would be removable, to allow day-to-day vehicle access, and would be deployed when required. It would require the permanent installation of two aluminium tracks to be attached either side of the doors to the exterior of the building.

## **PLANNING JUSTIFICATION**

National and local planning policy principles seek to protect and enhance historic environment assets and places, and to enable positive changes. NPF4 requires the historic environment to be valued, protected and enhanced, both supporting the transition to net zero and ensuring assets are resilient to current and future impacts of climate change. Where adverse impacts cannot be avoided, they should be minimised.

Alterations to listed buildings within conservation areas should seek to preserve the special architectural, historic character and interest of the building, and the appearance of the conservation area. NPF4 requires the quality of design and suitable materials to be relevant considerations to alterations proposed to historic buildings and environments. This includes the replacement of timber doors which are not fit for purpose and/or beyond economic repair.

NPF4 however also places significant weight on tackling the climate change emergency, and seeks to encourage, promote and facilitate development which adapts to current and future impacts of climate change, to make places more resilient to climate change impacts. Development proposals to retrofit measures to existing developments that support adaptation to climate change should therefore be permitted.

Scottish Water has built up extensive knowledge and experience over a period of 10 years on flood door design. Door manufacturers can supply external flood doors which incorporate a variety of materials, including timber. These use gasket compression as a means to seal the door against flood water. These work by compressing the existing weather seal gasket or a bespoke fabricated gasket installed within the door. These mechanisms engage every time the door is used, and not just when required to seal and function as a flood door. This places constant pressure on the door mechanism, which compromises its functionality over time and significantly reduces its effective lifespan. The leakage rate through the flood doors with gaskets therefore fails to meet the BSI standard PAS1188 – for Flood Protection Products.

Scottish Water has therefore played a key role in developing an alternative sealing mechanism for flood resilient doors. The Stormeister 'Active Flood Seal' has been developed and does not rely on the compression of gaskets. The technology allows flood water to enter a multi chamber structure which then pressurises to create the seal. The seal only operates for the duration of a flood event and not during normal everyday use of the door, prolonging the life and effectiveness of the flood door. The 'Active Flood Seal' mechanism has been specifically designed to be incorporated into uPVC profile doors. The mechanism cannot be fitted or retrofitted into timber doors.

An alternative to a flood door would be demountable flood barriers which have been available and widely used for the past 30 years. These barriers can be robust and cost-effective for many customers. They are however dependent on early flood warning systems (i.e. Met Office, SEPA) and customers being aware, present on site (which is not always the case with commercial buildings) and able to install barriers, in anticipation of a predicted flood event. These flood warnings are also not always reliable in the case of an overloaded sewer network during periods of localised flash flooding, such as those experience in this area.

Vehicle access however needs to be maintained through the roller shutter doors into the warehouse. The rapid assembly barrier would therefore be required to provide flood protection in these circumstances.

## **CONCLUSION**

The proposed flood doors are required to mitigate against sewer flood water entering the property from the pavement outside via external doors, which has repeatedly caused extensive damage to the internal fabric and contents of the building. These flood events have become more frequent in recent years and are directly associated with the climate change emergency. The only reliable and effective flood mitigation doors

currently on the market which meet BSI standards and Scottish Water's requirements have been design using uPVC materials and are supplied by Stormeister.

NPF4 supports the use of retrofit adaptations that are necessary in vulnerable areas such as this to address climate change. NPF4 also requires the quality of design and suitable materials to be relevant considerations to alterations proposed to historic buildings and environments. The proposed replacement doors are good quality design and the material suitable for the purposes of mitigating against flooding. The style and colour seek to reflect the existing doors. The visual impact of the barrier would be temporary during flood events and the external mounting tracks would have little or no adverse visual impact.

Scottish Water acknowledges however that replacing the timber doors with modern uPVC materials would alter the character and appearance of the listed building and the conservation area. This statement has sought to explain why replacement timber flood doors would not be a viable solution in this instance and that the uPVC replacements proposed are necessary in order to protect the internal fabric and contents from repeat sewer flood events. Within this context Scottish Water has sought to ensure that any adverse impacts on the character and appearance would be kept to the minimum possible in this location, and on balance outweighed by the benefits of providing essential and effective flood mitigation at this time.

The granting of planning permission to install the proposed Stormeister flood mitigation measures would help to ensure that this historic building continues to be occupied/used and maintained, with an sustainable viable long-term future and valid insurance cover for the owners/occupiers.