Lewis & Co Planning
town planning consultants

Flood Proofing/Resilience Techniques Statement



Prepared on behalf of:
Mr and Mrs Fowler

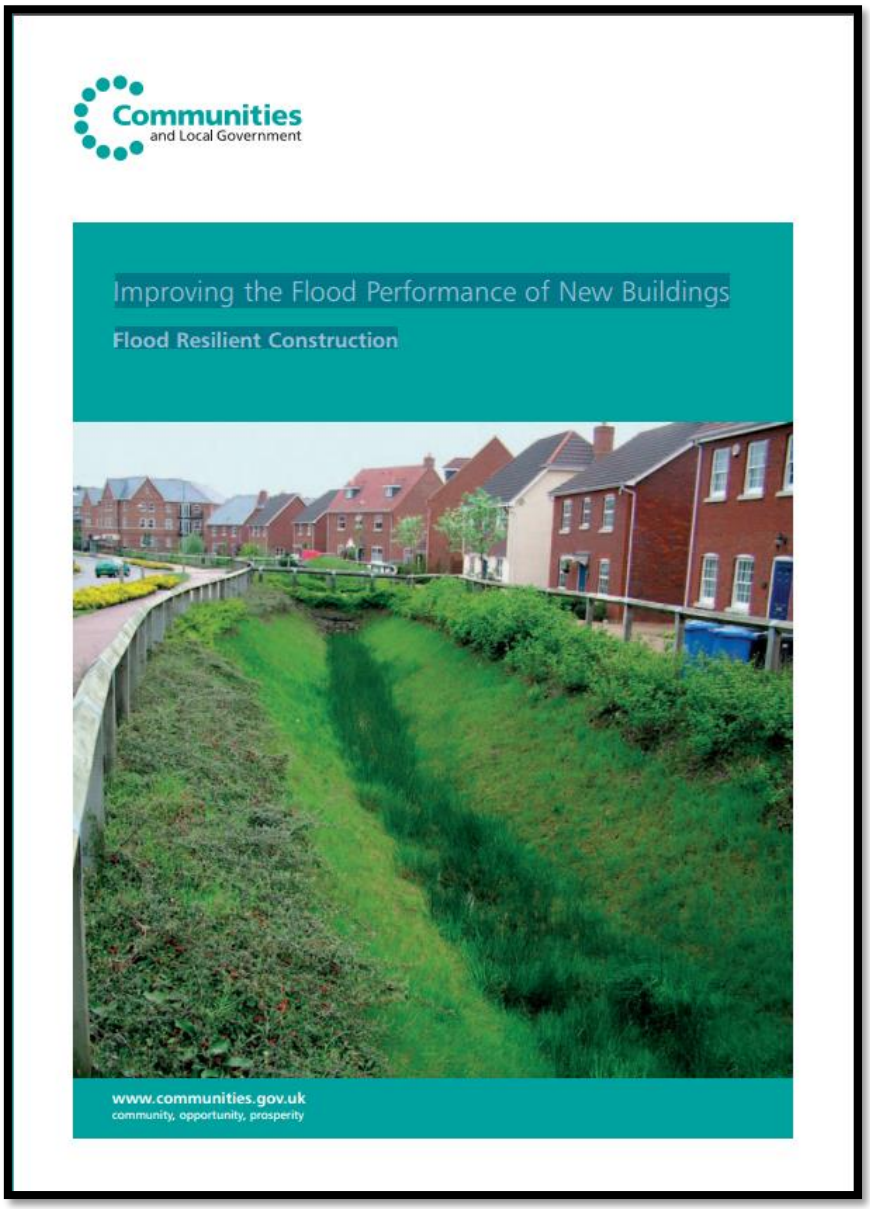
Site At:
128, Harbour Way, Shoreham-by-Sea

Proposal:
Erection of a two-storey extension to the side of the existing dwellinghouse in place of the existing garage incorporating new improved garage.

March 2018

Introduction

This statement confirms the flood proofing and resistance techniques that will be used in the construction of the proposed side extension.

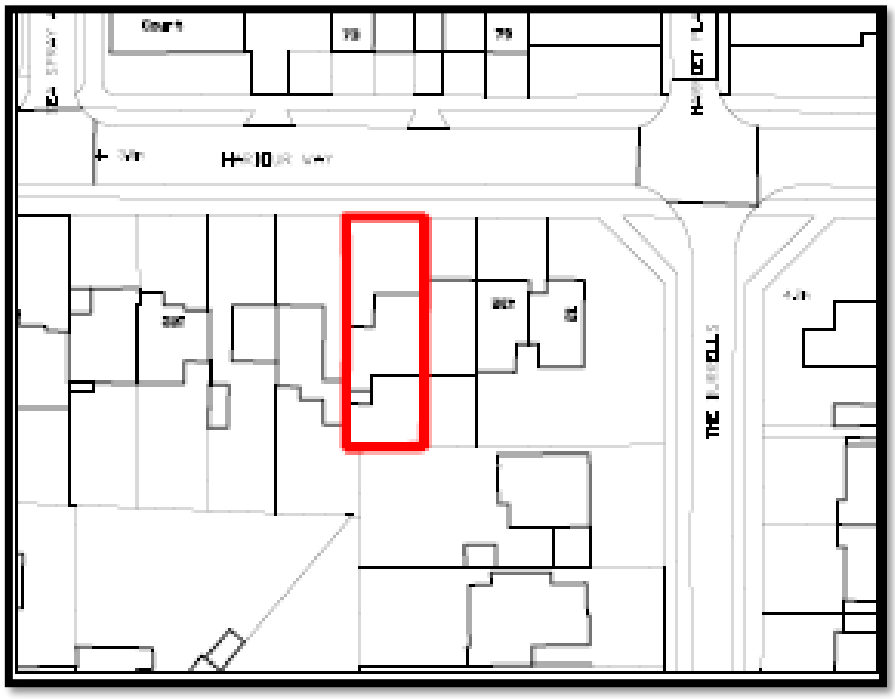


References in this document relate to the relevant section of the 2007 DCLG Document *"Improving the Flood Performance of New Buildings Flood Resilient Construction"*

Site

The site is located on Shoreham Beach. The Environment Agency Flood Risk Maps are not particularly clear but it appears from the available maps that the footprint of the house is outside of the flood zone but part of the front garden area may be in flood zone 2.





The plan extracts above show the location of the site in relation to the flood maps published by the Environment Agency.

Development proposed.

The proposed extension would create approximately 31.2sqm of additional ground floor space for the dwelling.

The majority of this floor space will be an extended living space.

The new internal ground floorspace for the house will incorporate the following features and recommendations from the guidance:

Flood prevention strategy

It is generally accepted that total prevention of water ingress or 'dry proofing' to a building is very difficult to achieve.

As the site is on the very cusp of flood zone 2 and the flood water depths would be less than 0.3m, this application proposes a Water Exclusion Strategy – where emphasis is placed on minimising water entry whilst maintaining structural integrity, and on using materials and construction techniques to facilitate drying and cleaning. This strategy is favoured when low flood water depths are involved (not more than 0.3m).

According to the definitions adopted in the Guidance, this strategy can be considered as a resistance measure but it is part of the aim to achieve overall building resilience.

Flood prevention measures proposed:

Building materials.

In accordance with the published guidance the proposed extensions will be constructed with Engineering Bricks to the first 300mm plus 1 course from ground level.

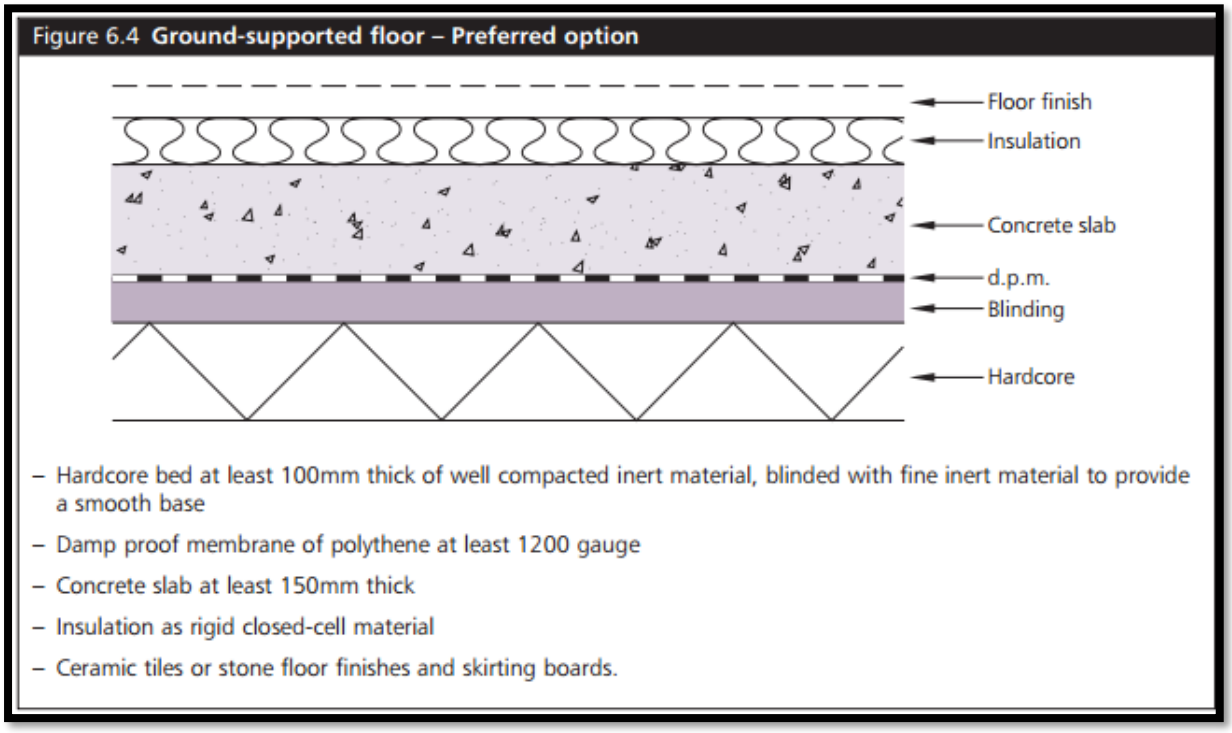
In addition the exterior of the building will be rendered to further improve impermeably of the fabric.

Foundations.

Because of the local ground conditions, a raft foundation is proposed. This type of foundation is inherently more resilient to flooding than strip foundations, in accordance with the guidance, any blocks used in the foundations will be encased in concrete to prevent water movement from the ground to the wall construction.

Floors

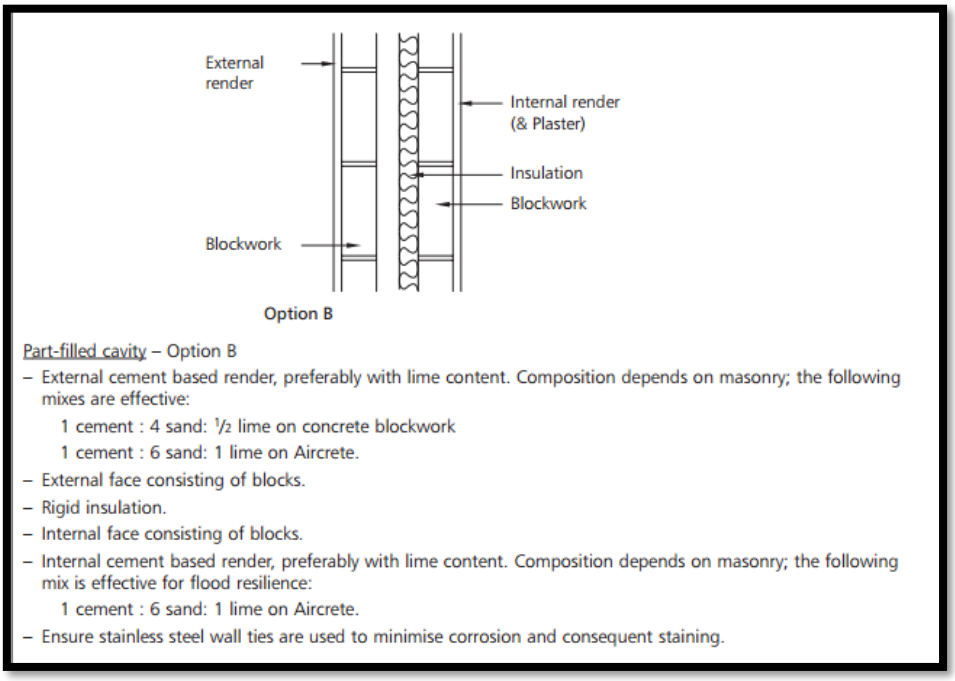
In accordance with the best practice set out in the guidance, the floor of the extension will be a concrete slab of at least 150mm thickness to resist uplift forces, and with a 1200 gauge impermeable polythene membrane.



Above: Proposed floor construction as recommended by Environment Agency.

Walls

In accordance with the recommendations of the Environment Agency, the external walls will be a part-filled cavity with render to the external masonry wall.



Part-filled cavity – Option B
- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective:
  1 cement : 4 sand: ½ lime on concrete blockwork
  1 cement : 6 sand: 1 lime on Aircrete.
- External face consisting of blocks.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
  1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.

Above: Proposed wall construction as recommended by Environment Agency.

The external render will further discourage water ingress in addition to the engineering blocks proposed for the first 300mm plus one course:

External renders are effective barriers to water penetration and should be used with blocks (or bricks) at least up to the predicted flood level plus the equivalent of a course of bricks as freeboard. Structural checks may be necessary to ensure stability, because of the external water pressures that could occur for design flood depths above 0.3m. External cement renders with lime content (in addition to cement) can induce faster surface drying.

Above: Extract from guidance on wall construction.

Doors and windows

In accordance with the published guidance, the proposed scheme would use a sealed UPVC external front door and windows. Air vents will in the top of the door and window frames.

Fittings and services

All electrical sockets and wiring to the ground floor will be a minimum of 500mm above F.F.L. There will be underfloor heating or hot air ducts. The sealed wet central heating system would not be affected in the event of a flood.

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