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Flood proofing/resilience and resistance techniques.

Site: 12 Overmead, Shoreham

Water entry strategy:

A general principle for flood resilient design where predicted flood water depths are high is to provide durable materials that will not be affected by water and use construction methods and materials that promote easy draining and drying.

Standard methods and good quality building materials will generally comply with these requirements but good workmanship is essential./

Floors

Concrete ground bearing floors are the preferred option and proposed in this instance with a concrete slab of at least 100mm.

Hardcore and blinding to be well compacted to reduce the risk of settlement and consequential cracking.

Damp proof membrane is included in the design to minimise the passage of water through ground floors. Impermeable polythene membranes should be at least 1200 guage to minimise ripping. Effective methods of jointing membrane sections are to provide 300mm overlaps or with mastic taping with mastic tape with an overlap of 50mm minimum. Care should be taken not to stretch the membrane in order to retain a waterproof layer. The insulation material should be placed above the concrete slab as this will increase the chances of any damaged insulation due to water ingress retaining its thermal properties any allow for easier replacement should it become damaged.

Any services under the floor should not be in ferrous materials.

Walls

As the outer skin of brick work, ensure mortar joints are thoroughly filled to reduce the risk of water penetration. As frogged bricks are to be used, they must be laid frog up so that filling becomes easier and coverage more certain. Under no circumstances will perforated bricks be used.

The inner skin will be of aerated blocks as they allow less leakage than concrete blocks. The surface finish will be plasterboard on dot and dab as this can be used as a sacrificial material.

Doors and windows

Raise the door threshold as high as possible is the primary measure to take. In addition, sealed PVC external framed doors should be used as the will not warp or shrink allowing ingress of water.

The windows are also vulnerable to flood water and therefore should be of the same construction as the doors.

As the existing dwelling has suspended timber floors, the ducted air bricks should be fitted with the type of air brick that reduce the risk of water penetration i.e. telescopic type.

Services

Where possible, all service entries should be sealed with expanding foam or similar closed cell material.

Closed cell insulation should be used for pipes which are below the predicted flood level.

Electrical sockets should be installed above flood level for ground floors to minimise damage to electrical services and allow speedy re-occupation.

Boiler units and ancillary devices should be installed above the predicted flood level and preferably at first floor level. Underfloor heating should not be used. Conventional heating systems, i.e. hot water pipes should not be affected by flood water.

Wiring for telephone, internet and other services should be protected by suitable insulation in distribution ducts to prevent damage. Any proposed design solution for flood insulation on all potentially vulnerable wiring should be discussed with the relevant service provider.