

Flood Risk Assessment

24 October 2022

Document Length 11 Pages

In Support Of:-

Proposed Rear / Side Extension At:

42 Pinn Way, Ruislip, HA4 7QF

London Borough Of Hillingdon (East Ruislip Ward)

Under Planning Application No:

77113/APP/2022/2250

DESKTOP STUDY

The geographical location of the development site is shown in Figure 1.1



Figure 1.1 Site Geographical Location

A Block Plan is shown in Figure 1.2 showing the proposed extension indicatively. More detailed plans are available and can be referred to under the planning application ref. 77113/APP/2022/2250.

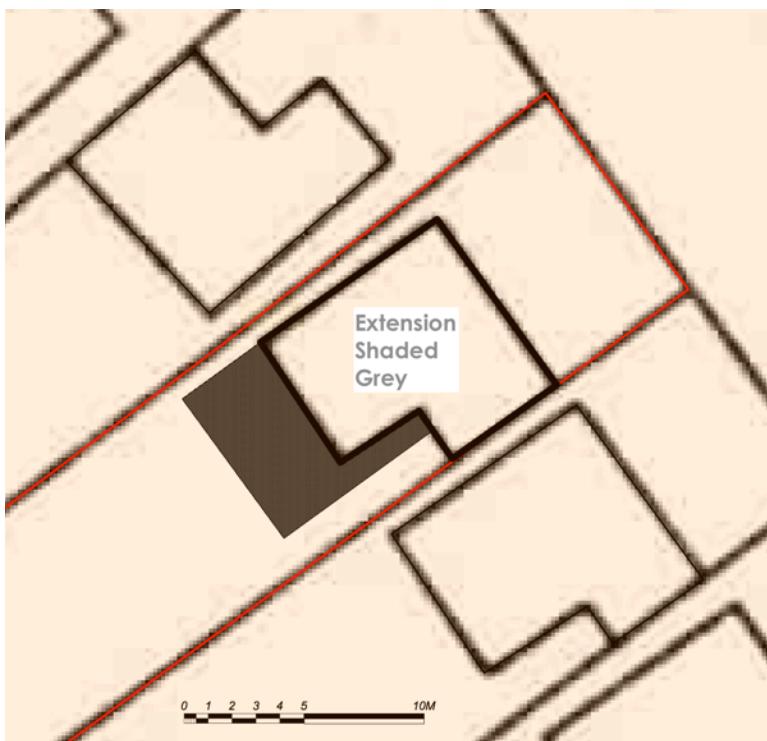


Figure 1.2 Block Plan Showing Proposed Rear / Side Extension, Scale 1:200

Flood mapping for the site is shown in Figure 2 showing the site lies in Flood Zone 2 contiguous with Flood Zone 1.

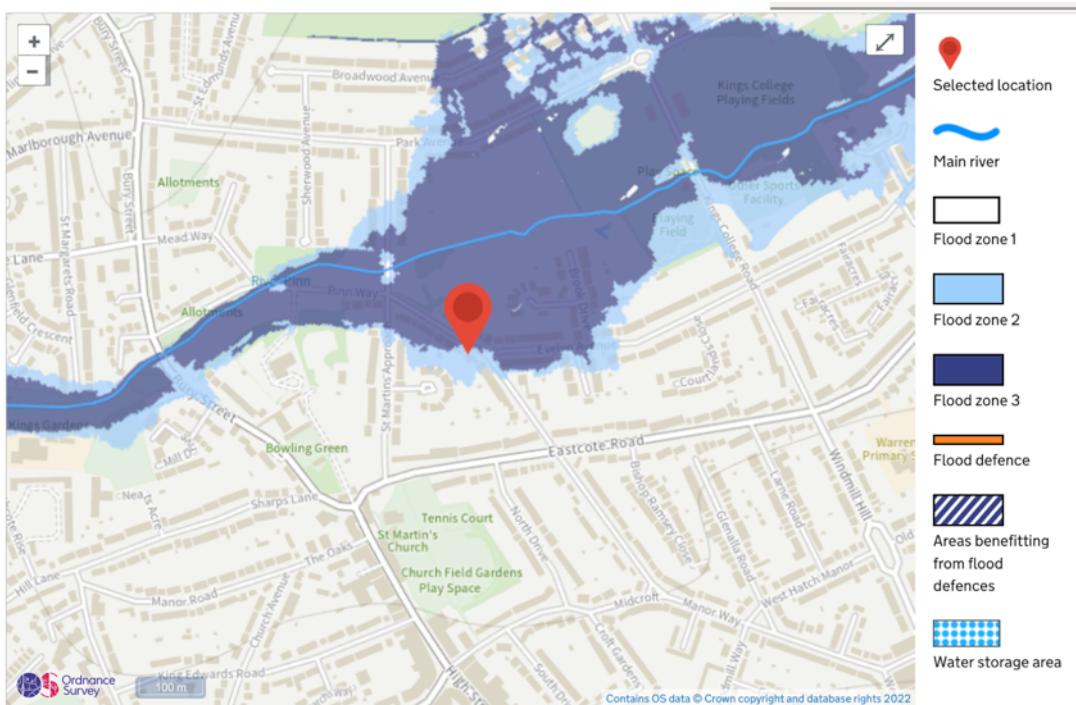


Figure 2 Indicative Flood Map

This is considered a minor development within NPPG. Under NPPG it states that minor developments are unlikely to cause significant flood risk unless they:

- Have an adverse effect on a watercourse, flood plain or its flood defences.
- Would Impede access to flood defence and management facilities.

OR

- Where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.

None of the above applies in this case. The NPPG definition of minor development is as follows:

The requirements for an FRA that is submitted to the Local Planning Authority for minor development within Flood Zone 1/3, in relation to flood risk, are defined as follows:

1. Minor non-residential extensions: industrial/commercial/leisure etc. extensions with a footprint less than 250m²
2. Alterations: development that does not increase the size of buildings e.g.

alterations to the external appearance. householder development: For example; sheds, garages, games rooms etc. within the curtilage of the existing dwelling, in addition to physical extensions in the existing dwelling itself.

The proposed extension is very much below the 250m² ceiling.

According to the EA's advice the minimum requirements for an FRA that is submitted to the Local Planning Authority for Residential/Industrial/Commercial extensions less than 250m² within Flood Zone 2 should confirm that:

- . a) Floor levels within the proposed development will be set no lower than existing level AND
- . b) Flood proofing of the proposed development has been considered by the applicant and will be incorporated where appropriate OR
- . c) Floor levels within the extension will be set 300mm above the known or modelled 1% (1 in 100 chance each year) river flood level or 0.5% (1 in 200 chance each year) tidal and coastal flood level.

This must be demonstrated by a plan to OS Datum/GPS showing finished floor levels relative to the known or _{modelled} flood level.

It is considered that paragraphs a) & b) will apply to this development and that c) will not apply.

Site Levels

Figure 3.1 shows indicative site levels for the rear garden complete with an elevation profile running from the lowest point at 42m (to north west) running up towards the south east demonstrating an expected rise which is indicated on the table as 140mm across a distance of approximately the same as the extension site.



Figure 3.1 Indicative Site Levels At Rear Of House

A more detailed analysis of site levels can be seen in Figure 3.2 showing the same level in the north west corner as being refined to be 41.49m

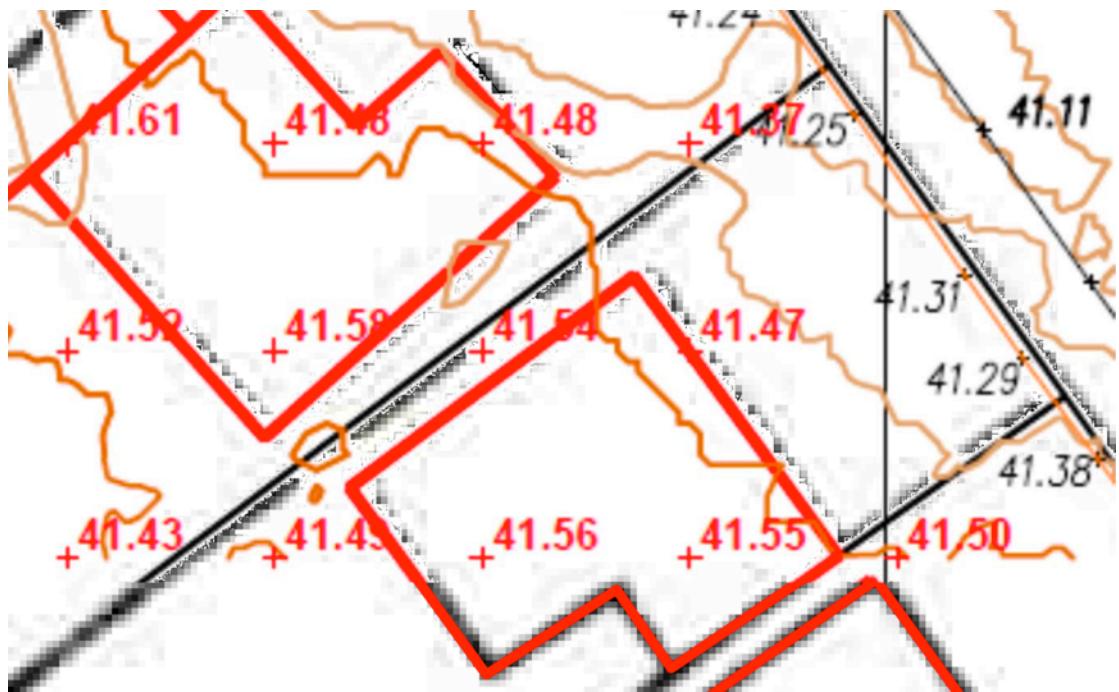


Figure 3.2 Detailed Site Levels

Floor Levels

Figure 4.1 shows the existing floor level is at least 310mm above the ground level (at approx. mid point across the house width) and Figure 4.2 shows that, given a level floor arrangement as proposed, this will increase to be 360mm at the new door opening in the extension which is to be 4m further out. Given the previously established site level this deduces a working floor level above ordnance datum of at least 41.80m.



Figure 4.1 Existing House Floor Level Above Site Level



Figure 4.2 Proposed Extension Floor Level Above Site Level

Fluvial Flood Risk

The site is classified as very low risk for river flooding as demonstrated by Figure 5 taken from Gov.UK. Figure 6 taken from Hillingdon shows the flood mapping in more detail and how the site, particularly in the area of the rear / side extension is in reality on the boundary between Flood Zones 1 & 2. A quick check of the available EA Flood Level Information reveals that the nearest node point no. 237 would, under the 100 year plus 35% modelling, give a predicted maximum river flood level of 41.21m AOD. This is still approximately 590mm below the floor level of the house.

The screenshot shows the GOV.UK flood risk summary page. At the top, there is a header with the GOV.UK logo and the text 'Check your long term flood risk'. Below the header, a 'BETA' label indicates this is a new service. The main content is titled 'Flood risk summary for the area around: 42, PINN WAY, RUISLIP, HA4 7QF'. The page is divided into two main sections: 'Surface water' and 'Rivers and the sea'. The 'Surface water' section is highlighted with an orange bar and shows 'Medium risk'. Below this, there is a link to 'What this information means' and a list of characteristics of surface water flooding. The 'Rivers and the sea' section shows 'Very low risk' and a link to 'View a map of the risk of flooding from surface water'.

Figure 5 Flood Risk Summary

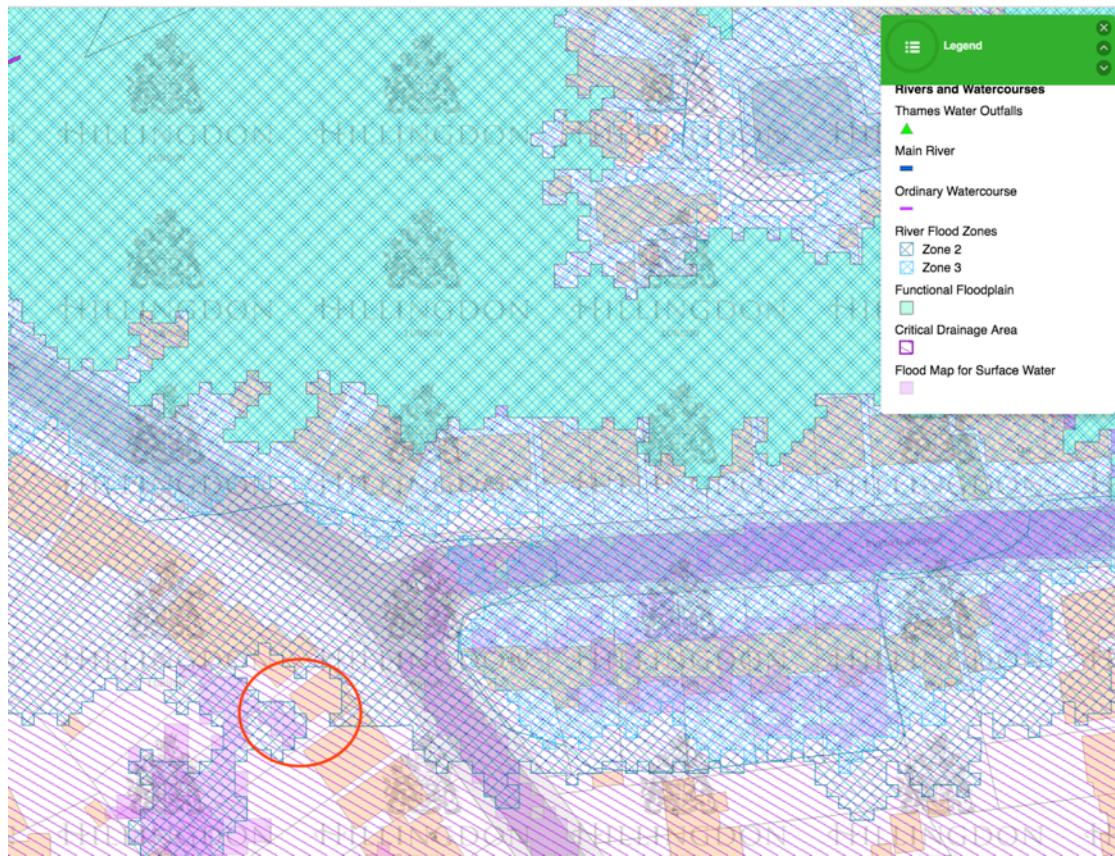


Figure 6 Hillingdon Flood Risk Overview Map

Pluvial Flood Risk

Figure 6 shows some pink mapped areas depicting the 'medium' risk of surface water flooding and these are located at the site of the rear extension. To understand the risk further the depth of the mapped areas needs to be determined and this information cross referred to the floor level / upstand established earlier as 360mm.

Figures 7.1 & 7.2 narrow down the anticipated flood depth to within 250-500mm

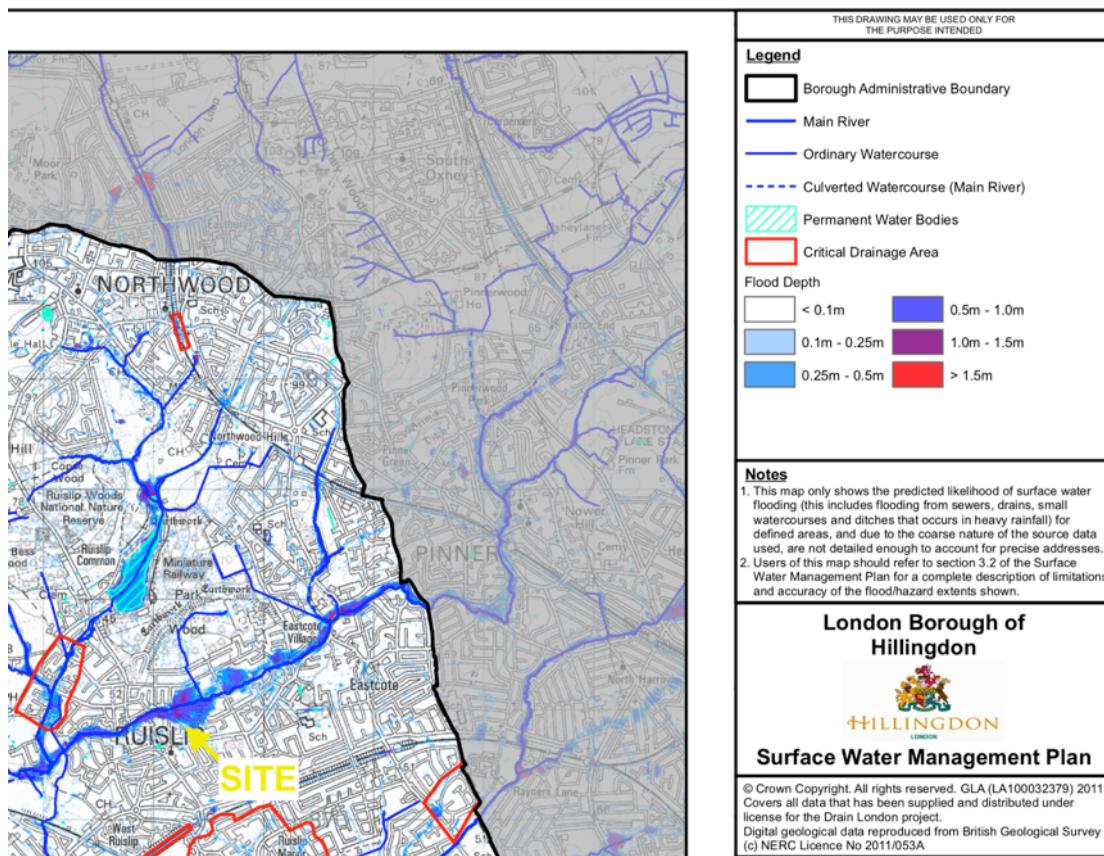


Figure 7.1 1 in 100 Year Rainfall Event With Climate Change

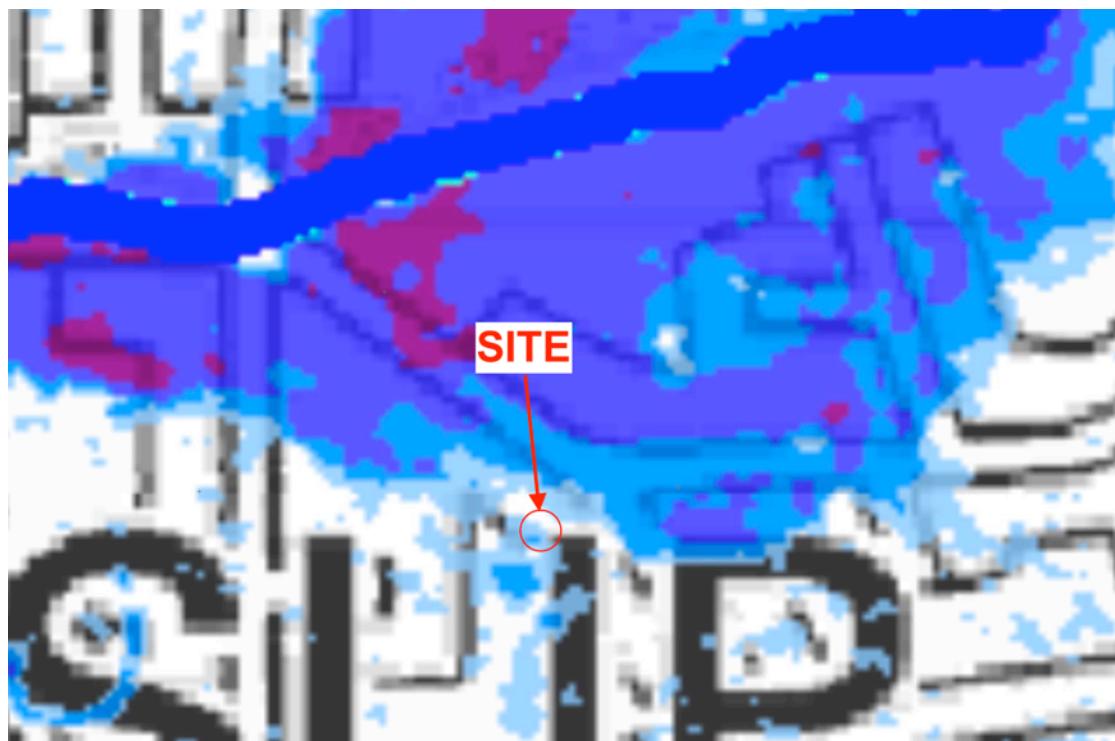


Figure 7.2 1 in 100 Year Rainfall Event With Climate Change ENLARGED VIEW

Figure 7.3 shows that in a medium risk scenario the maximum flood level anticipated at the rear of the house would be 300mm (so a very low threat as

this is still below floor level) and the risk of this occurring is between 1-3.3% per year.

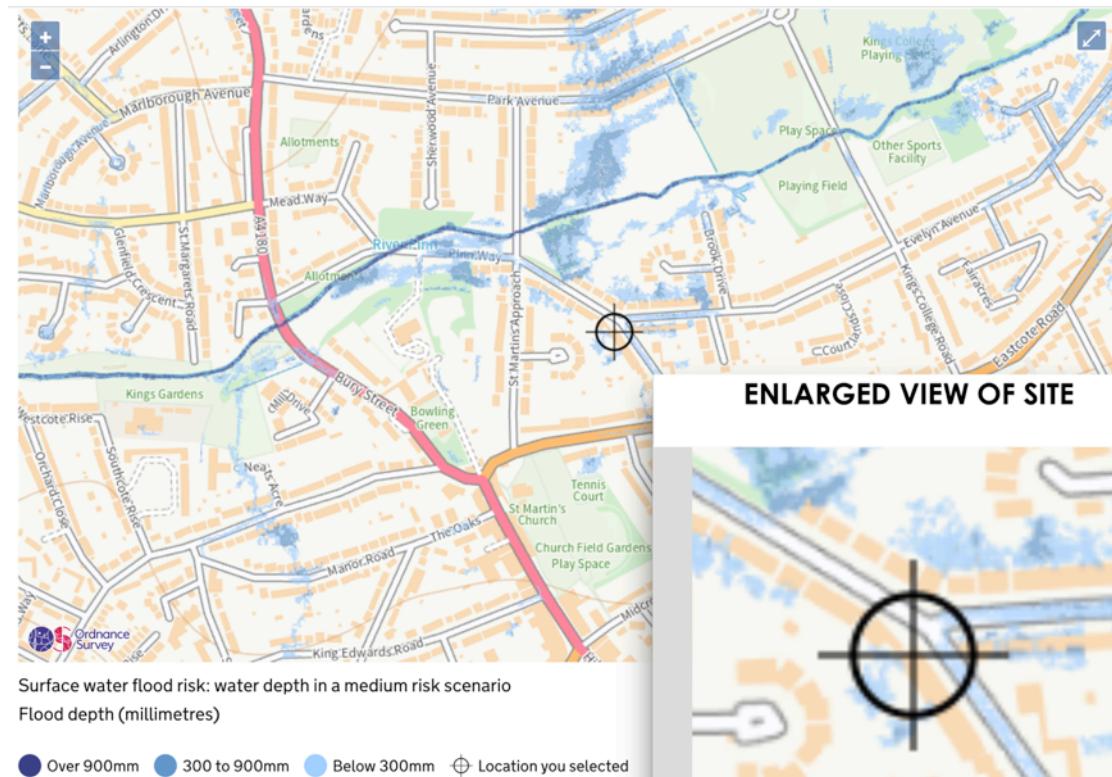


Figure 7.3 Surface Water Flood Risk In A Medium Risk Scenario

In conclusion there remains then a low risk scenario where the flood level potentially could reach a higher level but the risk of this happening is only between 0.1-1% per year and given that the mapped risk area within the highlighted zone on Figure 7.2 is very small and isolated within a larger area of lighter blue it is unlikely to reach above 360mm in reality. The Flood & Water Management Team will have access to more accurate mapping data to substantiate these observations.

Critical Drainage Area

Figure 7.1 shows the site lies outside all identified critical drainage areas

Groundwater

It is understood that at this postcode there is no risk from rising groundwater

Sustainable Drainage

It is anticipated that the limited rainfall run-off from the extension can be managed by sending to a soakaway and this can have a flow regulator fitted if necessary

The new rear patio will be constructed at the local ground level in a permeable surface build-up

Flood Resilience Measures

In conclusion flood resilience measures for the very minor residual surface water flooding risk identified earlier are not deemed to be required but at the Flood & Water Management Team's discretion the following measures could be considered advisory:-

- a) Proposed cavity walls are to have rigid insulation batts and stainless steel non-corroding ties (likely to be specified anyway)
- b) Proposed new walls to be sand + cement rendered internally
- c) Flooring to be tiling (likely to be specified anyway)
- d) No timber skirtings to be installed
- e) Timber stud and plasterboard walls at ground-floor levels are to be avoided
- f) Use low-permeability lime-based (breathable) paints and not oil-based paints
- g) Solid timber doors (not hollow section doors) should be installed
- h) All electrics to be installed as a high-level ring (not underfloor) and drop down from the ceiling to a point at least 1 metre above floor level electric sockets

Ends.