

Building Regulations Application

Response to schedule of additional information/details for 23/01851/FP

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Thank you for reviewing our building regulations application and for providing constructive feedback. I have summarised our response to each of the points you raised below, and have amended the plans and Supporting Documentation accordingly. I hope that the revised plans are to your approval.

1 Structure

1. *Foundations to be to the approval of the District Building Surveyor*

I confirm that foundations for the Porch and Extension will be inspected and approved by the District Building Surveyor prior to the commencement of any further construction. A note to this effect has been added to page 6 of the plans. No new foundations are needed for the Utility Room and WC (i.e., rear room).

2. *New walls should be suitably bonded to existing walls. i.e., using a proprietary wall starter kit.*

I confirm that new walls will be bonded to the existing walls using a wall starter kit such as SabreFix Stainless Steel Wall Starter Kit, or similar.^[1] This has been added to plans and has, where necessary, been added to the Supporting Documentation.

3. *Wall plates should be strapped to new masonry walls every 2m, using galvanised steel straps at least 1m length.*

The only reference to wall plates in the original submission was on the plans for the porch. It has since been realised that they are not required, and so have been removed from the plans.

4. *Can you confirm the roof span? The proposed 120×47 C16 joists appear slightly under spanned according to the Trada tables, at 2.4m maximum clear span.*

Thank you for pointing out this oversight. The clear span of the extension (study) is 2.36m, while the clear span of the rear room is 2.83m. So while the extension roof is just within the maximum clear span, the rear room and garage roof are not. The rear room and garage joists have now been upgraded to 145×47 C24, which have a maximum clear span of 3.1m. Since the clear span of the extension is close to the maximum clear span for 120×47 C16, these have now been upgraded to C24. The 120×47 C16 floor joists in the rear room have also now been upgraded to C24, and the plans have been changed to show them supported by sleeper walls with a separation of 1.6m between supports. Section 3.3.1 of the Supporting Documentation has been changed accordingly.

5. *The new flat roof should be strapped to masonry walls where joists run parallel, across min 3x timbers with noggins every 1800 centres using 1.2m galvanised steel straps.*
A 1.2 m galvanised steel strap has been added to the plans of the roof of the rear room and the study. In the case of the study it is tied to an existing masonry wall, while in the case of the rear room it is tied to the new rear wall. In both cases the straps extend over three joists. A plan of the substructure of study roof (showing joists, noggins and strap) has been added to the plans, and the Supporting Documentation has been changed accordingly.

2 Fire safety

1. *The garage floor level should be a minimum 100mm below the floor level to the new utility room.*
The utility floor is approx. 293 mm above the garage floor. This is now shown on the plans and described in Section 3.3.1 of the Supporting Documentation.
2. *The fire door to the garage from the utility room requires smoke seals and a self-closing device.*
These have now been added to Section 3.3 of the Supporting Documentation and a note to this effect has been added to the plans.
3. *The flat roof covering should achieve BROOF(t4) rating.*
According to the BBA certification (included as an additional document to this resubmission) 18 mm plywood with a fully-adhered 1.2 mm ClassicBond Non-reinforced EPDM membrane achieved BROOF(t4) standard when tested to DD CEN/TS 1187:2012, Test 4 and classified to BS EN 13501-5:2005. To ensure this is achieved, the 18 mm OSB under the EPDM has been replaced with 18 mm plywood, as shown on the amended plans.

3 Resistance to moisture and contaminants

1. *DPC should be 150mm above ground level linked with DPM/radon barrier, and tray DPC provided over the cavity*
All DPCs are a minimum of 150 mm above the ground level. This dimension is now shown on the plans where applicable. In the case of the study and porch, the DPC of the inner leaf is lapped with the DPM in the solid floor, as shown on the plans. Tray DPCs with stop ends have been added over the window and door openings in the rear wall to the rear room, with two weep holes, separated by no more than 450 mm, added per opening. Cavity trays and explanatory notes have been added to the plans, and the Supporting Documentation has been changed accordingly.
2. *Can you clarify the cavity wall insulation? ie. K106 partial fill cavity board requires minimum 50mm clear cavity.*
All insulation board in the masonry cavity walls – front wall of study & back wall of rear-room – has been changed to partial-fill (i.e., Kingspan K108 or similar; K106 is full-fill), with a 50 mm clear cavity. The U-value calculations have been altered accordingly. All insulation boards in dry-lined masonry walls (i.e., porch and side wall of rear room) have been changed to framing boards (i.e., Kingspan K112 or similar). A 25 mm clear cavity between the brick and stud walls has been added to these walls. To maintain the thickness of the side wall to the rear room, the thickness of the insulation has been reduced to 100 mm, increasing the overall U-value of the wall to 0.34 W m⁻² K. Please note, however, that the heated towel rail has now been removed from the w/c, meaning no part of the rear room will be heated so

thermal loss through the side wall will be minimal. Both the plans and the Supporting Documentation have been changed accordingly.

3. *A vapour barrier should be fitted to the warm side of the flat roof insulation. A breathable membrane is not required (Cutaway A and B)*

This has been amended on the plans.

4. *Can you confirm any existing ventilation to the front of the property, and how this will be maintained?*

The only existing ventilation to the front of the property (aside from current windows and doors) are two air bricks: one underneath the downstairs bay window, and another to the left of the front door. Both are now shown on the existing and proposed front elevations. Neither air bricks will be compromised by the proposed alterations.

4 Ventilation

1. *Note: Background ventilation is required to all new windows/doors, at a rate of 8000mm² for habitable rooms and kitchens, and 4000mm² for bathrooms.*

Trickle vents will be included in all new window and door frames. A note to this effect has been added to the plans and Supporting Documentation.

2. *Can you confirm how purge ventilation is to be achieved to the study? i.e. opening window or extract mechanical ventilation.*

The window will include an opening mechanism to allow purge ventilation. A note to this effect has been added to the plans and Supporting Documentation.

5 Drainage

1. *The new above ground drainage should be constructed in accordance with AD H1. Section 1.* Following discussions with Sheffield Buildings Control and Yorkshire Water, it has been decided that a macerator system such as the SaniFlow Sanitop Up Macerator^[2] or similar should be installed to the rear of the new toilet. Such macerators are rated to pump 100m horizontally, so are easily within spec for the 6-7m horizontal distance to the existing soil vent pipe into which the toilet waste will flow. A dual input macerator will be used to allow for waste input from the nearby sink, meaning only a single 32 mm waste pipe from the wc will be needed. This pipe will be routed under the floor joists of the rear room and will run along the inside of the rear wall. The waste pipe will then be routed through the wall separating the rear room from the kitchen, before exiting the house under the kitchen window then emptying into the existing soil vent pipe which serves the upstairs gravity toilet system. This routing has been chosen because it means that the waste pipe will not have to be directed around the existing drainage pipes to the rear of the property. The macerator will comply with BS EN 12050-1:2001; it and the connected pipework will be fitted according to the manufacturer's instructions.

6 Protection from falling, collision and impact

1. *Any glazing within critical locations eg. less than 800mm between floor and sill level should be safety glazing in accordance with BS EN 12600*

A note has been added to the plans and Supporting Documentation stating that the study window must be installed with safety glazing.

7 Conservation of fuel and power

1. *New doors and windows should achieve 1.4 U-value.*
A note has been added to the plans and Supporting Documentation stating that all new windows and doors should achieve a U-value of $1.4 \text{ W m}^{-2} \text{ K}$.
2. *A 25mm strip of insulation should be provided at the edge of the floor slab to help prevent cold bridging.*
A 25 mm strip of insulation has been added to the plans as required.

8 Additional changes

1. The construction of the solid floor in the study has been altered slightly. The thickness of the insulation has been increased to 140 mm and it now lies above a 65 mm-thick layer of concrete and directly below a 65 mm-thick cement screed. Previously the insulation was 120 mm thick and lay below both the screed and the concrete. The new structure still complies with the insulation manufacturer's installation guidelines.

Materials

- [1] Sabrefix Wall Starter Kit Stainless Steel.
- [2] Saniflo Sanitop Up Macerator 400W 220/240V