

SPRINGFIELD COURT: REPLACEMENT & IMPROVEMENT OF FLAT ROOF TECHNICAL ISSUES

Water Ingress

1. An inspection of the roof has shown that the roof felt had failed there is frequent ponding water on the low side in front of the roof lights.
2. The roof lights are single skin Georgian Wired Glass
3. From the "As Built" drawings the roof construction was determined to be 125 x 50 mm joists with 55-5 mm firing pieces on top. This supports plywood decking and roof felt.
4. The joists are supported under the glazed lights by 250 x 75 mm timber beams supported at their mid point by steel posts.
5. The joists have been checked and the section found to be satisfactory.
6. The beams have also been checked and found to be satisfactory except for deflection. This accounts for the ponding on the finished roof.
7. To eliminate the ponding the existing roof should be removed locally to the low side roof lights and new firing pieces fitted custom made to eliminate the dishing in the roof.
8. To prevent ponding the timber beams on the low side should be flitched with steel plates. This will limit the future deflection of the beams.

Insulation and Related Works

9. To improve the insulation to the flat roof increasing the material thickness on top of the roof is necessary.
10. There is a cavity tray and flashing let into the brickwork. The construction detail shows an overlap of 100 mm of flashing and roof membrane. An increase in the roof construction will therefore compromise the required overlap of roof membrane and flashing leading to leakage at the wall positions.
11. To increase the roof thickness / improve insulation, the cavity tray will have to be raised and new flashings installed.
12. Due to the low level of the ceilings in the corridors it is not possible to insulate the underside of the roof joists.
13. Without reconstruction of the whole roof the only way to insulate the roof is to insert 2 layers of insulation into the joist zone to enable the existing services to pass through between the layers.
14. Should the roof construction be increased in thickness, the bathroom windows will need to be bricked up. Additional lights installed in the bathrooms and extract ventilation installed.
15. All flashings to the full perimeter to both the roof and glazing will have to be replaced.

General Issues

16. The new roof lights will be either polycarbonate or double glazed.
17. Fully automatic roof vents should be provided.
18. The new flat roof covering should be Sanafil or similar membrane.
19. In order to carry out the works the whole of the Artex ceiling will have to be removed and new ceilings provided.