

### Change in roof areas contributing to surface water drainage

All the existing and extension roof areas drain to the existing surface water drains via rainwater/downpipes and from there to the existing on-site soak pit.

The Site(Layout)Plan shows the location of the existing soak-pit.

Since the house was constructed the rainwater drains have never blocked nor has the drained water appeared at surface level

Analysis was done of the changed roof areas consequent on the extension.

- A. As measured on plan i.e., vertical projections of the sloped areas, there is no change/increase in roof areas as measured in plan
- B. As measured on the slope of the roof.

The roof areas measured on the slope were calculated as follows

Sloped roof area 'lost' because of extension -

$$7.5 \times 3.6 + (2 \times 2.1 \times 7.5 \times 0.5 \times 0.5) = 27 + 7.88 = 34.88 \text{ sq. m.}$$

Sloped roof area 'gained' because of the extension –

$$3.9 \times 2.75 + (2 \times 3.9 \times 1.4 \times 0.5) = 10.73 + 5.46 = \underline{16.19} \text{ sq. m.}$$

$$\text{Decrease} = 18.69 \text{ sq. m.}$$

Dimensions used above are taken from the drawings submitted.

Under this method of analysis, the extension causes a decrease of roof drainage area and therefore run-off.

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