

110 College Lane
Roof Volume Calculation**Proposed hip to gable extension:**

(triangular pyramid)

 $1/3 \text{ base area} \times \text{height}$ $= 1/3 (7.69 \times 2.95/2) \times 3.8$ $= 3.78 \times 3.80$ **= 14.4m³ additional volume****Existing side roof**

(rectangular base pyramid)

 $= 1/3 \text{ base area} \times \text{height}$ $= 1/3 (5.9 \times 2.59) \times 2.25$ $= 5.09 \times 2.25$ **= 11.4m³ previously added volume (remaining)****Proposed dormer**

(triangular prism)

 $= 1/2 \text{ base} \times \text{height} \times \text{length}$ $= 1/2 (3.53 \times 2.7) \times 4.73$ $= 4.76 \times 4.73$ **= 22.6m³ additional volume****Total additional roof volume****14.4 + 22.6 + 11.4 = 48.4m³**

Therefore, the proposed additional roof volume is less than the 50m³ allowance for a semi-detached house.