

A school wishes to build a stand-alone library on a green-field plot of land beside the school.

The school authorities agree to adapt the plan for the building as outlined on the Department of Education and Skills website- **Room Layouts for Post Primary Schools:** Reference RT – 023.1 (Library and Ancillary stores 100 m²).

The building is stand-alone and so there is no corridor to be built.

All external walls are to be 2-leaf cavity walls using standard 440 x 215 x 100 mm solid blocks with a 90 mm gap between them for insulation.

- 1. Verify that there are approximately 10 blocks per square metre of the wall, allowing 10 mm of mortar between the blocks.**

All internal walls are to be built as single leaf using the same standard block.

There is a precast lintel installed above the openings left in the walls for the window and doors. Each lintel is 215 mm high. The lintel extends 600 mm into the wall on either side of the opening left in the wall for the window and frame (i.e. Area left vacant before installation of the window frame) and 300 mm into the walls on either side of the door openings.

A pre-cast window sill is to be inserted in the front leaf of the wall only. The sill is of height 215 mm and extends 200 mm either side of the window opening.

All internal doors have width as specified in the general notes with an allowance of 25 mm on either side for the width of the frame. The external door frame unit width will be 2.6 times the width of the opening left for the internal door. The lintels above the doors are inserted in the 12th course of blocks.

The area of the window opening is 40% of the area of the wall in which it is set as viewed from the room.

- 2. Calculate suitable dimensions for the window.**
- 3. Make a scale drawing of the elevation D – D, to include the position of the window.**

The building is to be constructed on a concrete base with no blocks in the foundation.

- 4. Calculate the number of concrete blocks required to complete the building, using the dimensions given in the DES file drawing.**

Allow for 5% wastage with the blocks.

- 5. Using the standard bale found on-line in Ireland, calculate the number of bales of blocks required to complete the building.**