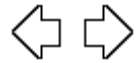
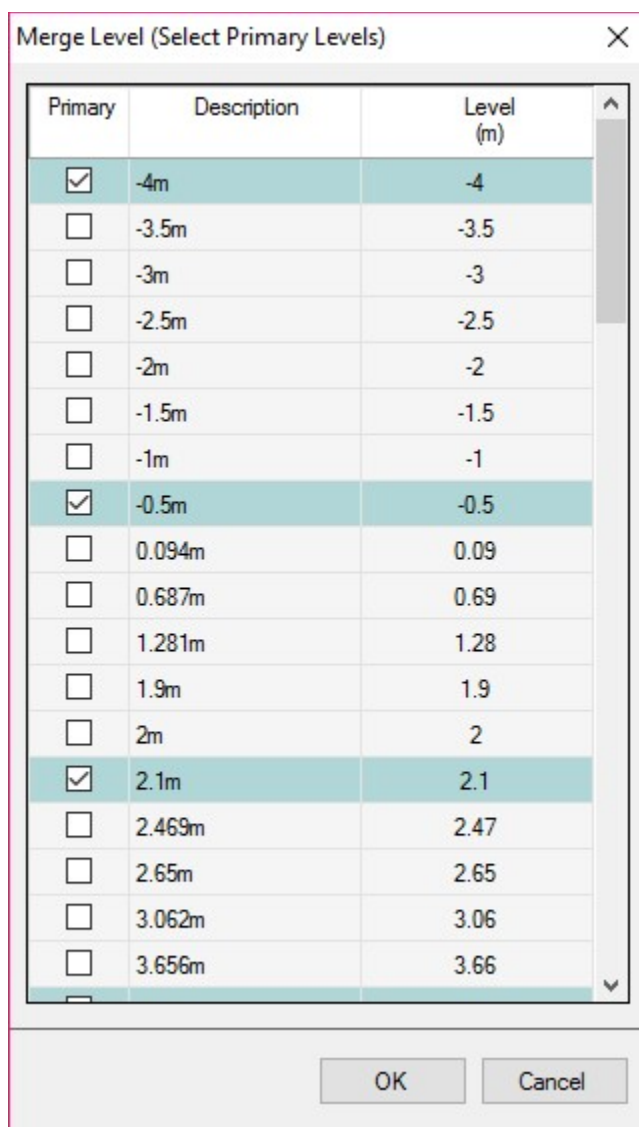


Level Merging



Sometimes in buildings, there are levels at which one may have small platforms or mezzanine, or we have only lintel-beams at these levels. In such cases, design engineers would want the columns to be designed with floor height across these levels. RCDC takes care of this requirement in following manner –

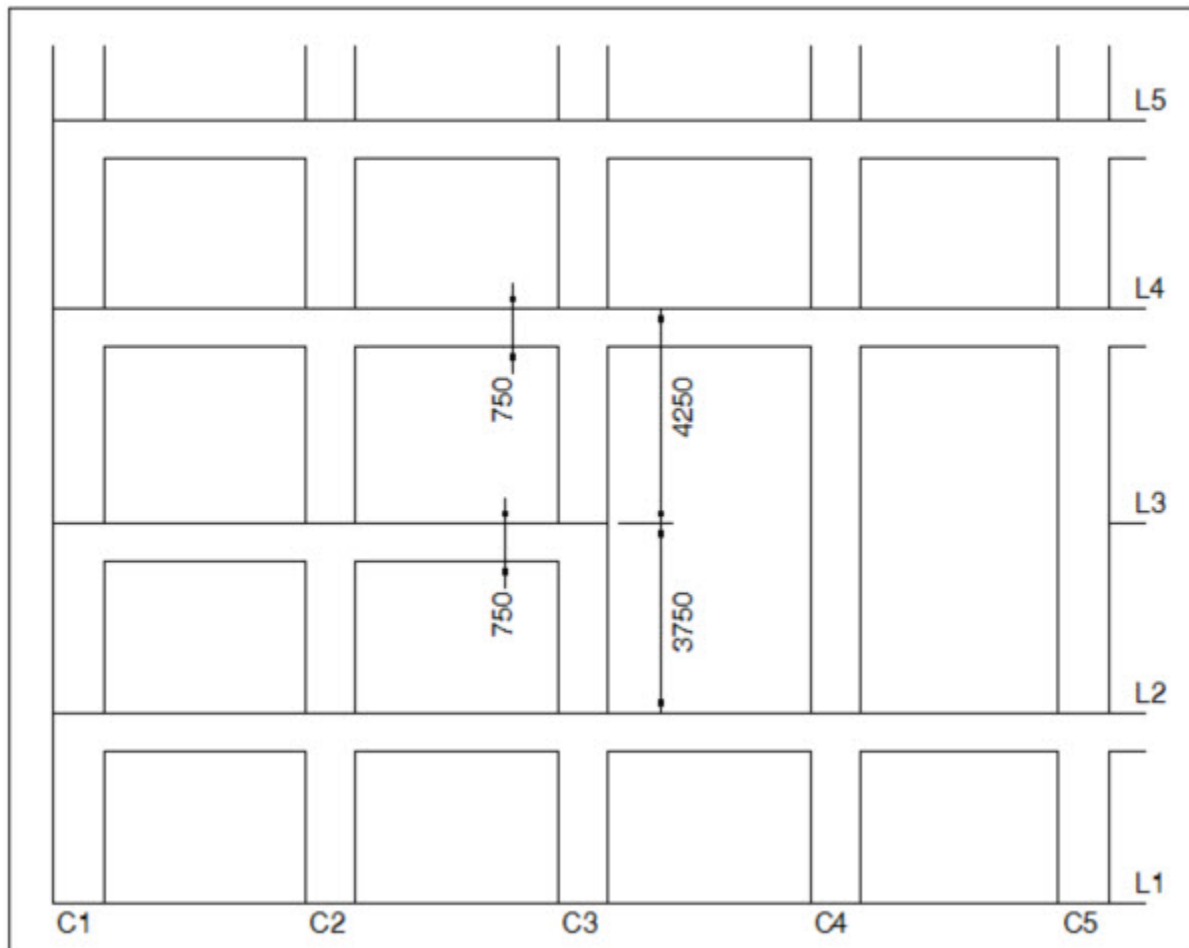
1. User can 'Merge Levels' in the column design module. When user chooses this command, a small window will pop up, (refer below snap shot) user has to select all the primary levels in said window so that the secondary levels which are not selected will be merged with the primary level. RCDC calculates clear height of columns to be same across these levels and considers this calculated height for further working of that column.



2. Further user can choose to 'ignore' beams at intermediate levels and the floor heights

would get added for calculation of effective height.

Please check example below regarding above explanation –



Merging Levels – (Without ignoring beams)

Levels L2 and L3 are merged and beams at L3 are not be ignored. As a result following is the change in floor heights for columns –

For columns C1, C2 and C3

(Between L2 to L3)

Floor height = 3.75 m

Clear height = 3.75 m – 0.75m

= 3.0 m

(Between L3 to L4)

Floor height = 4.25 m

Clear height = 4.25 m – 0.75m

= 3.5 m

For design of columns C1, C2 and C3 between L2 to L4, clear height would be considered as higher of the two, which in this case is 3.5 m.

For columns C4 and C5,

(Between L2 to L4)

$$\text{Floor height} = 3.75 + 4.25 \text{ m} = 8.0 \text{ m}$$

$$\begin{aligned} \text{Clear height} &= 8.0 \text{ m} - 0.75 \text{ m} \\ &= 7.25 \text{ m} \end{aligned}$$

Merging Levels – (Ignoring beams)

Levels L2 and L3 are merged and beams at L3 are to be ignored. As a result following is the change in floor heights for columns –

For columns C1, C2 and C3,

(Between L2 to L4)

$$\text{Floor height} = 3.75 + 4.25 \text{ m} = 8.0 \text{ m}$$

$$\begin{aligned} \text{Clear height} &= 8.0 \text{ m} - 0.75 \text{ m} \\ &= 7.25 \text{ m} \end{aligned}$$

For columns C4 and C5,

(Between L2 to L4)

$$\text{Floor height} = 3.75 + 4.25 \text{ m} = 8.0 \text{ m}$$

$$\begin{aligned} \text{Clear height} &= 8.0 \text{ m} - 0.75 \text{ m} \\ &= 7.25 \text{ m} \end{aligned}$$

NOTE:

- 1) While calculating the clear height along major and minor axes of column, RCDC accounts for beam depths along both directions in appropriate manner.

Cantilever without tie back beam is not considered as tie for the column.