Seismic strengthening of an UCM-URM building using RC ring beams.

Example Illustrations of strengthening of LBM school buildings using horizontal band beams or seismic belt techniques.
APPLICATION CASE STUDIES:

Horizontal ring beam installed in an LBM type school building in Nepal that was damaged (minor) after the 2015 Nepal earthquake (Photo from Nepal, Copyright: The World Bank)

PRECAUTIONS AND LIMITATIONS:

Horizontal band beam installation is a major intervention requiring disturbance to the roof structure. Part or all of the roof structure might need to be rebuilt depending on the level and location of roof structure connection to the masonry walls, hence this strengthening can be costlier. The reinforcement from new RC ring beams must be well connected (hooked or anchored) to the roof structure as well as to the underlying masonry walls. The joints of the cross ring beams should be carefully detailed with adequate reinforcements.

REFERENCES:


Notes:

- The design details and figures shown here are for illustration purpose only.
- The authors do not assume any responsibility for the consequences of adopting the proposed strengthening solution.
- Experienced structural engineers have to design (dimensions, details and material specifications) and supervise the interventions for each application case.