VULNERABILITY REDUCTION SOLUTIONS

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Sheet:	1 OF 1

REINFORCED CONCRETE BUILDINGS

GENERAL INFORMATION

Strengthening Intervention: **Infills Isolation**

Applicable Building Types:

1. Main structural system:……	RC1		RC2	X	RC3	X	RC4	X	RC5	
2. Height range:……..…..……			Low (LR)	X			Medium (MR)	X	High (HR)	X
3. Seismic design level:……..…….……	Poor (PD)	X	Low (LD)	X			Medium (MD)	X	High (HD)	X

EXISTING STRUCTURAL DEFICIENCIES

-Soft story; -Captive column.

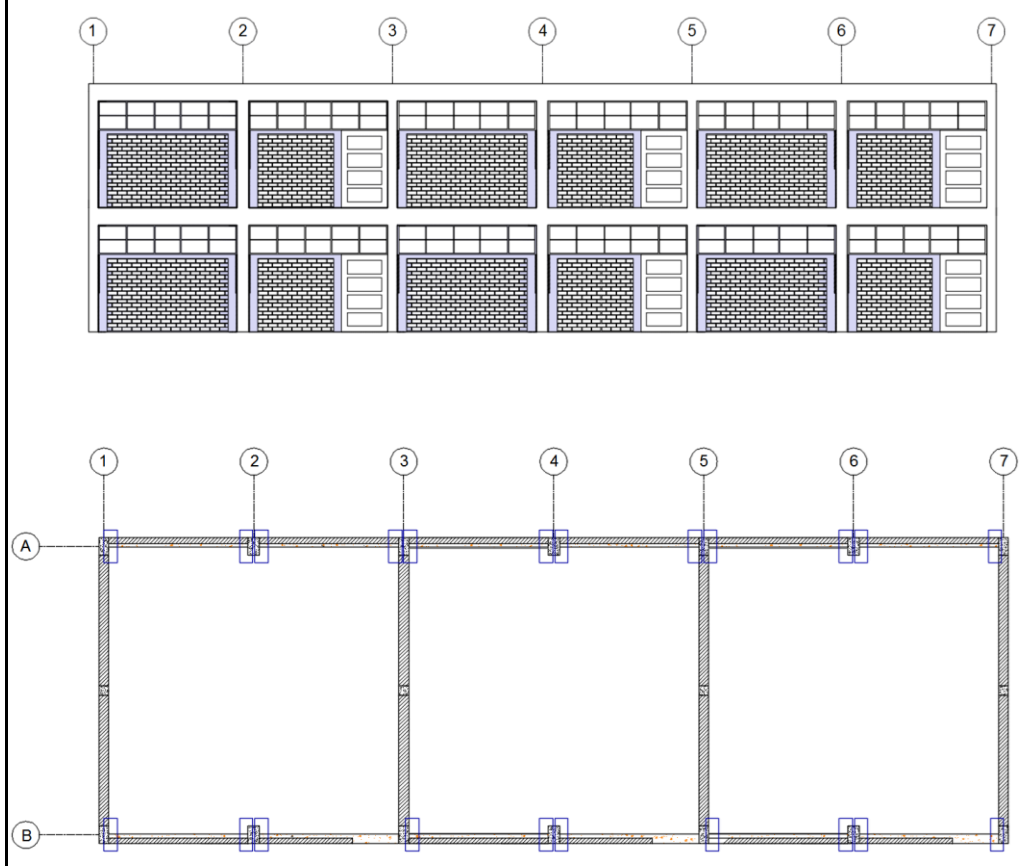
STRUCTURAL IMPROVEMENTS AFTER STRENGTHENING

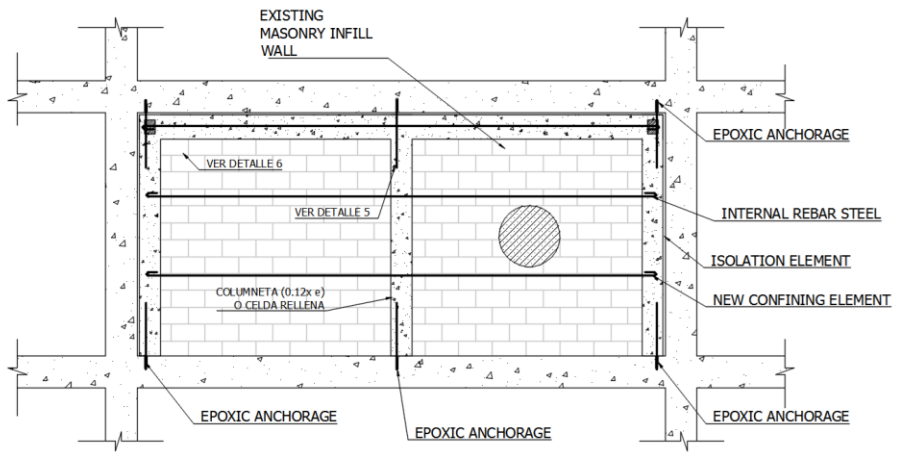
- Fragile collapse mechanism avoided.

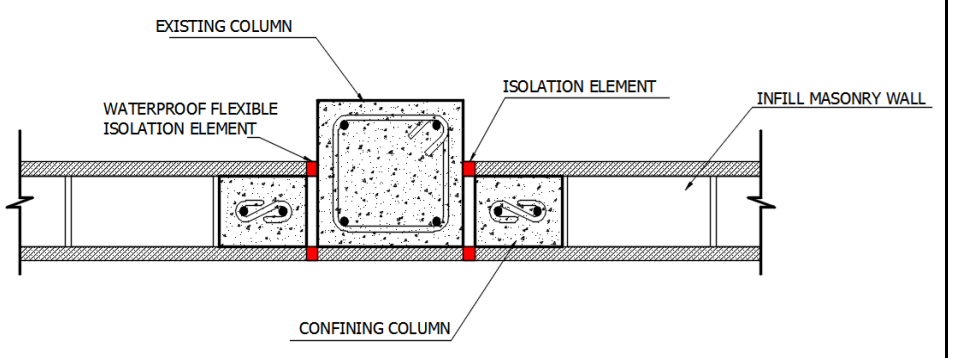
STRENGTHENING INTERVENTION DESCRIPTION

This type of intervention improves the seismic behavior of the building avoiding the short column collapse mechanism. The first step is to isolate non-structural masonry walls from the structure. After that, the remaining infill wall needs to be retrofitted in order to eliminate the out of plane failure.

ILLUSTRATIVE FIGURES







FURTHER REFERENCES

ASCE (2017). Seismic Evaluation and Retrofit of Existing Buildings ASCE 41-17. American Society of Civil Engineers, Washington DC, USA.
FEMA (2012). Reducing the Risk of Nonstructural Earthquake Damage - A Practical Guide FEMA E-74. Federal Emergency Managment Agency, Reston, Virginia, USA.

Notes

- The proposed intervention options are for illustration purposes only.
- All dimensions, details and material specification has to be specifically designed for each application case.
- Any actual reinforcement solution requires the participation of a structural engineer.
- The authors do not assume any responsibility for the use of the proposed reinforcement options.