

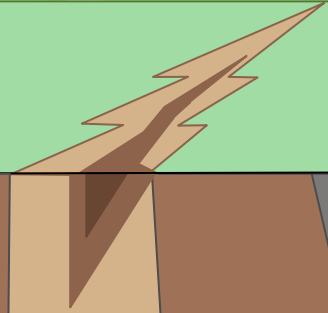
Predicting Earthquake Damage in Nepal

By Seung Lee

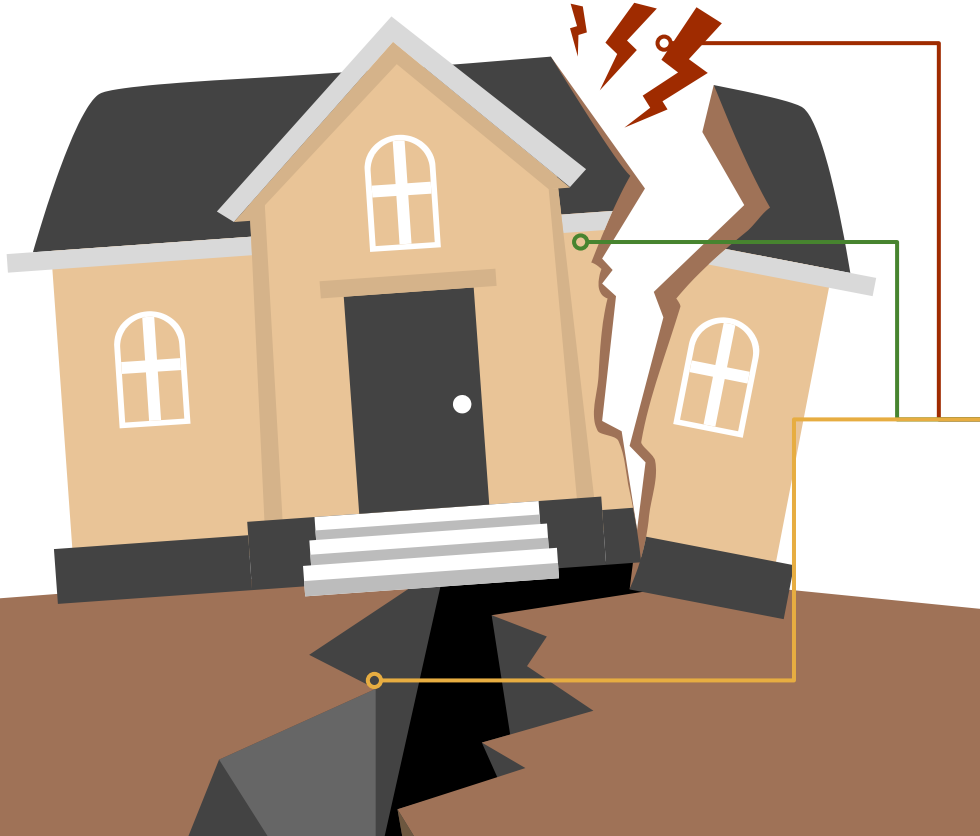


Agenda

- **Business Understanding**
- **Data Understanding**
- **Findings**
- **Recommendations**
- **Future Research**



Business Understanding



Minimize Damage

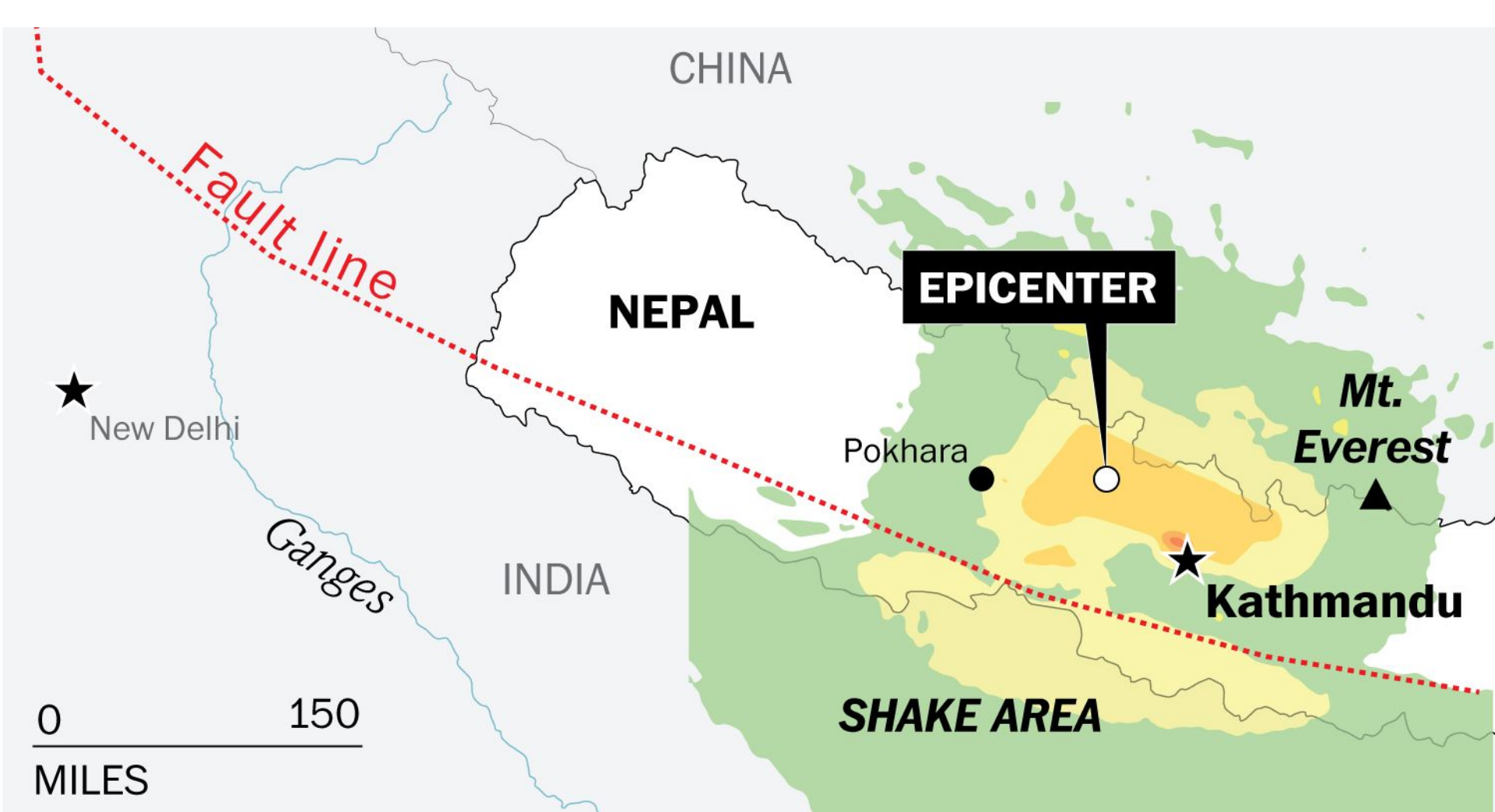
Unexpected Earthquakes

Model Damage Predictor

Building characteristics



What's Important?





Data Understanding

Nepal Earthquake - 2015

Two Major Earthquakes Within 3 Weeks of Each Other



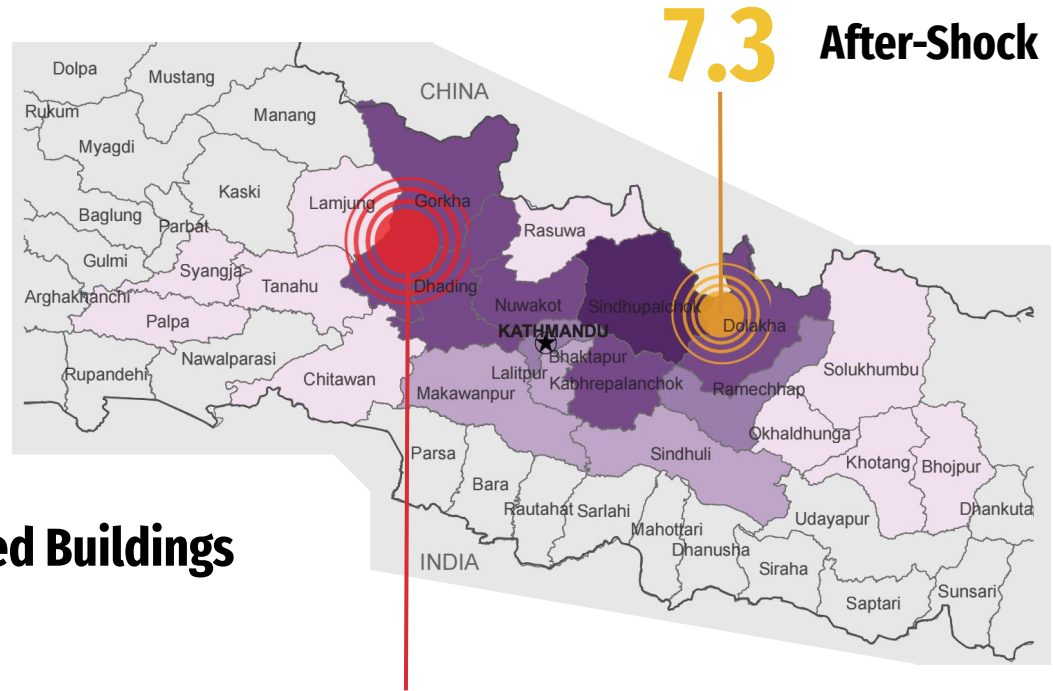
260K

Damaged Buildings



3,677,173

Individuals Affected



7.3 After-Shock

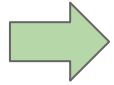
7.8 Main Shock

Accuracy - 70%

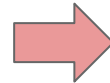
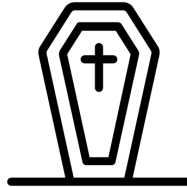
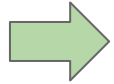


Finding Balance

False Positives



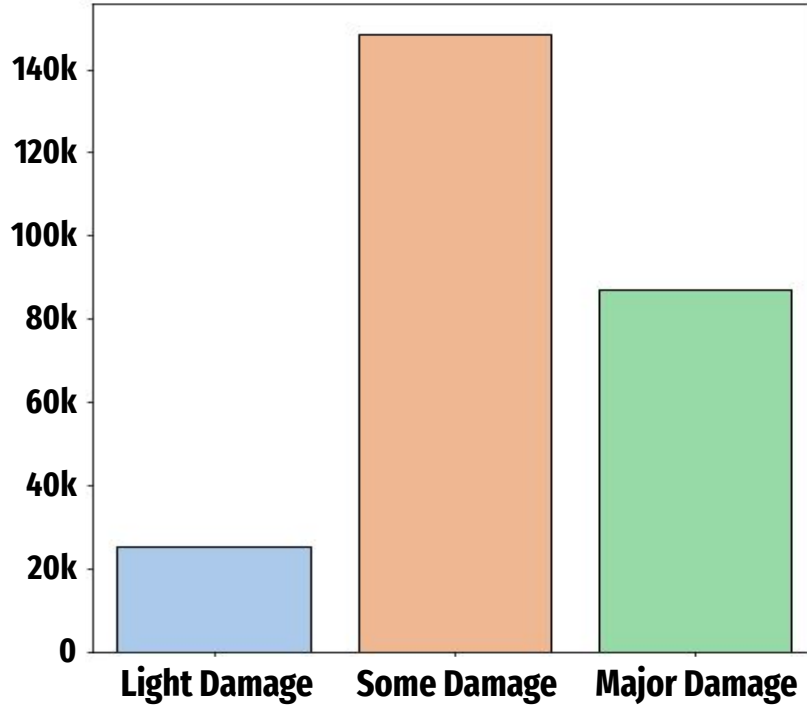
False Negatives



Accuracy

Data Understanding

Level of Destruction



10 %

Light Damage

Minor Repairs

57 %

Some Damage

Moderate Repairs

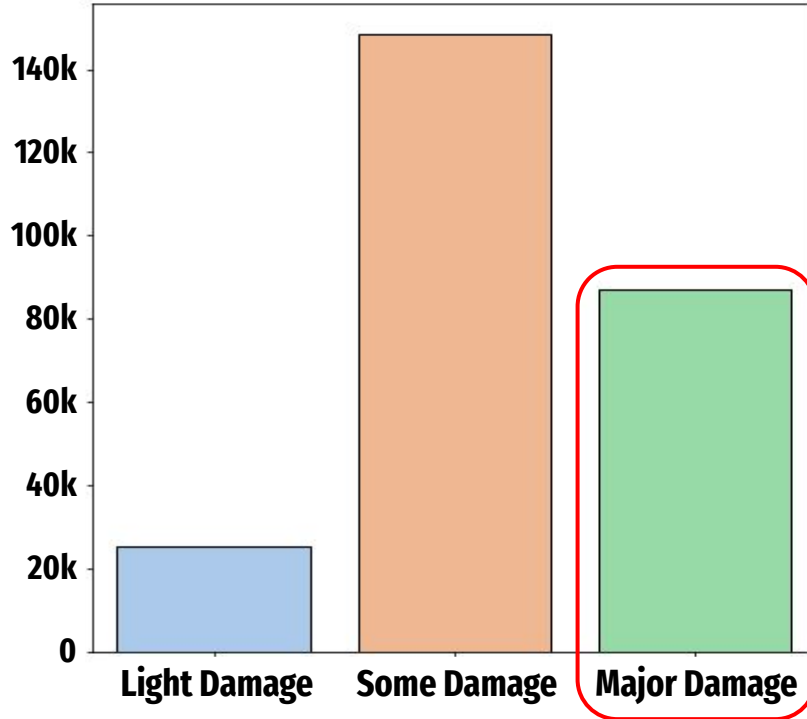
33 %

Major Damage

Almost Complete
Destruction

Data Understanding

Level of Destruction



10 %

Light Damage

Minor Repairs

57 %

Some Damage

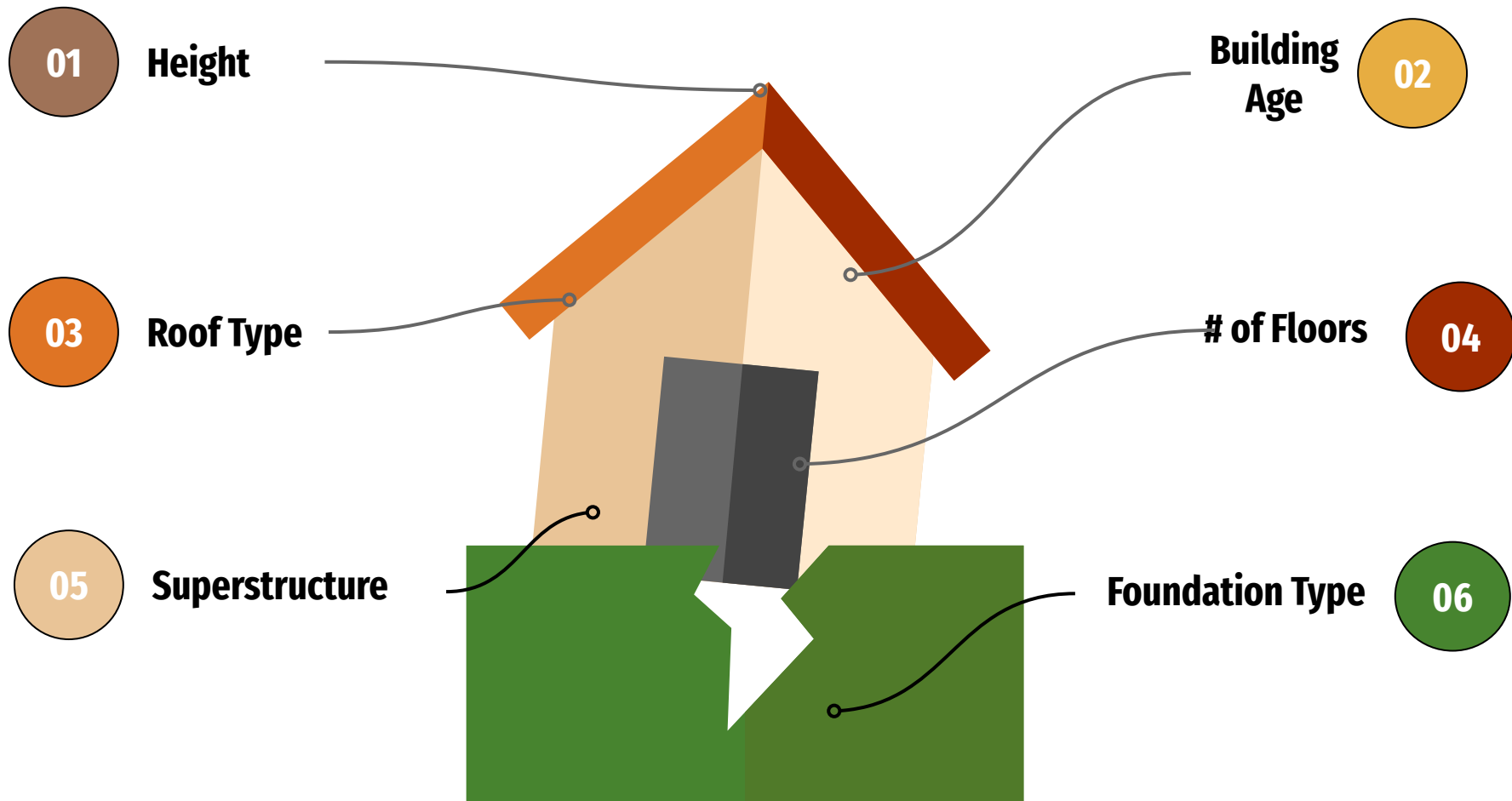
Moderate Repairs

33 %

Major Damage

Almost Complete
Destruction

Modeling Features (Some)



Findings

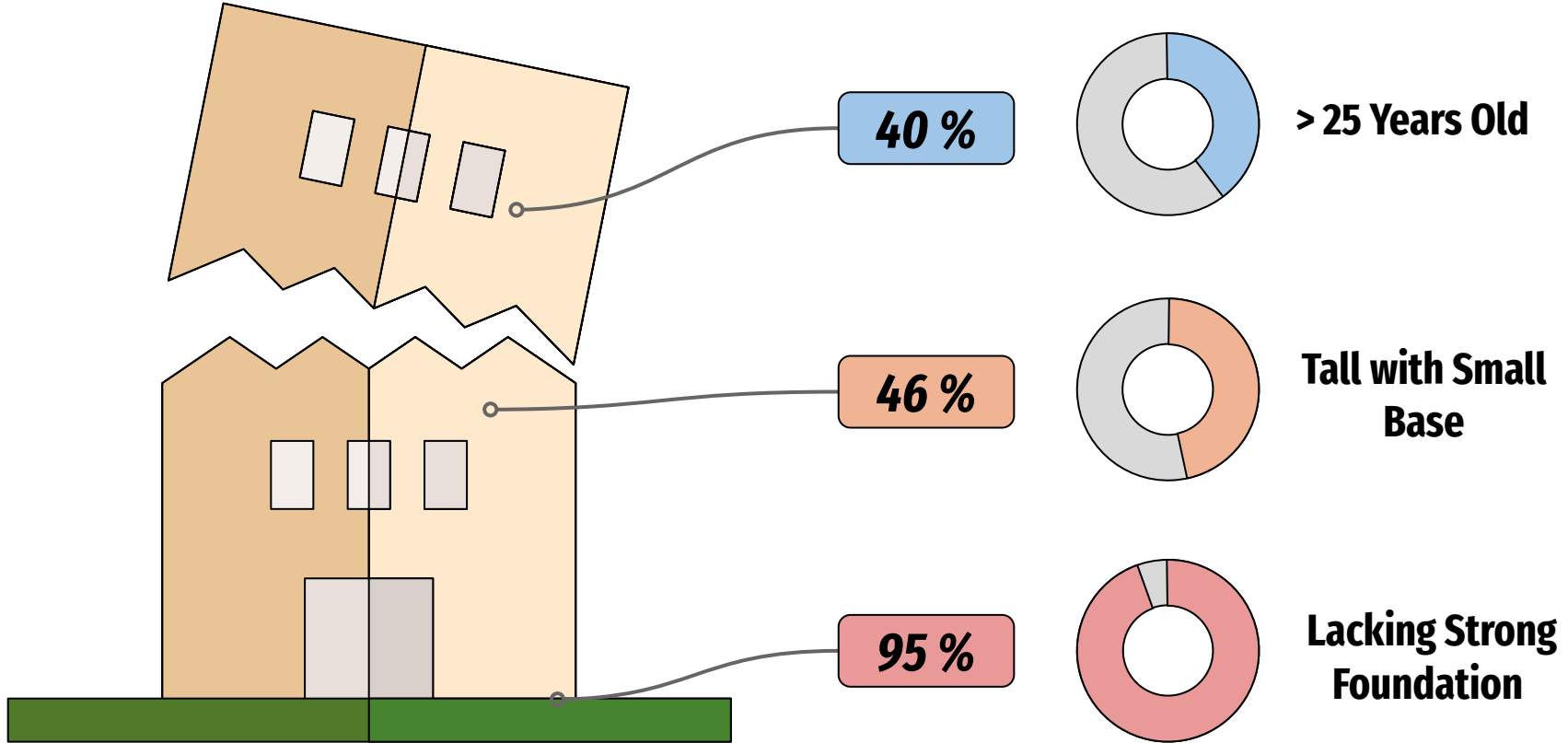
?

?

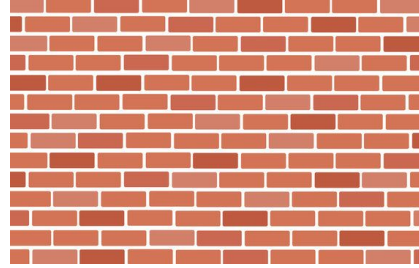
?

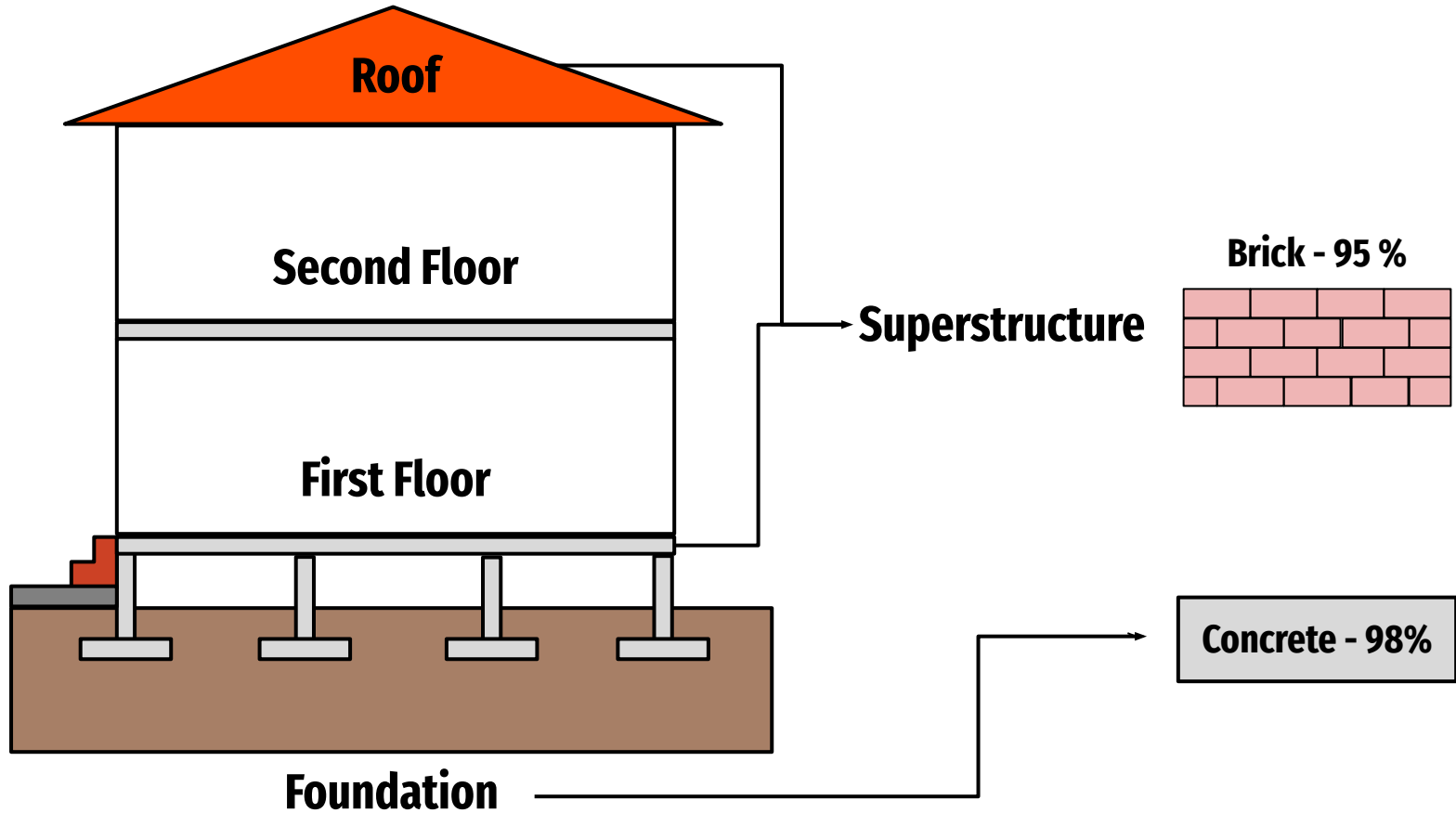


Buildings That Were...



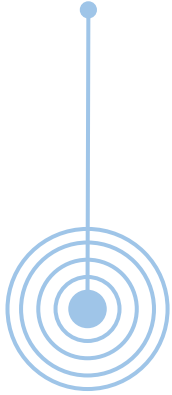
Foundation, Foundation, Fou - Superstructure?!





Recommendations

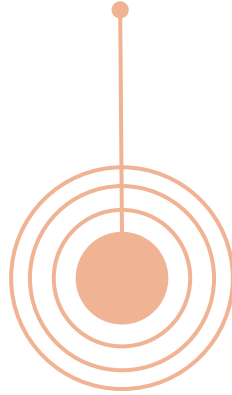
Low Cost



Inspect

**Start Inspections at 25
Years Age**

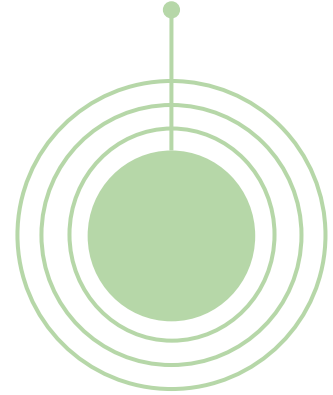
Medium Impact



Focus

**Focus Inspections on Tall
Buildings with Small Base**

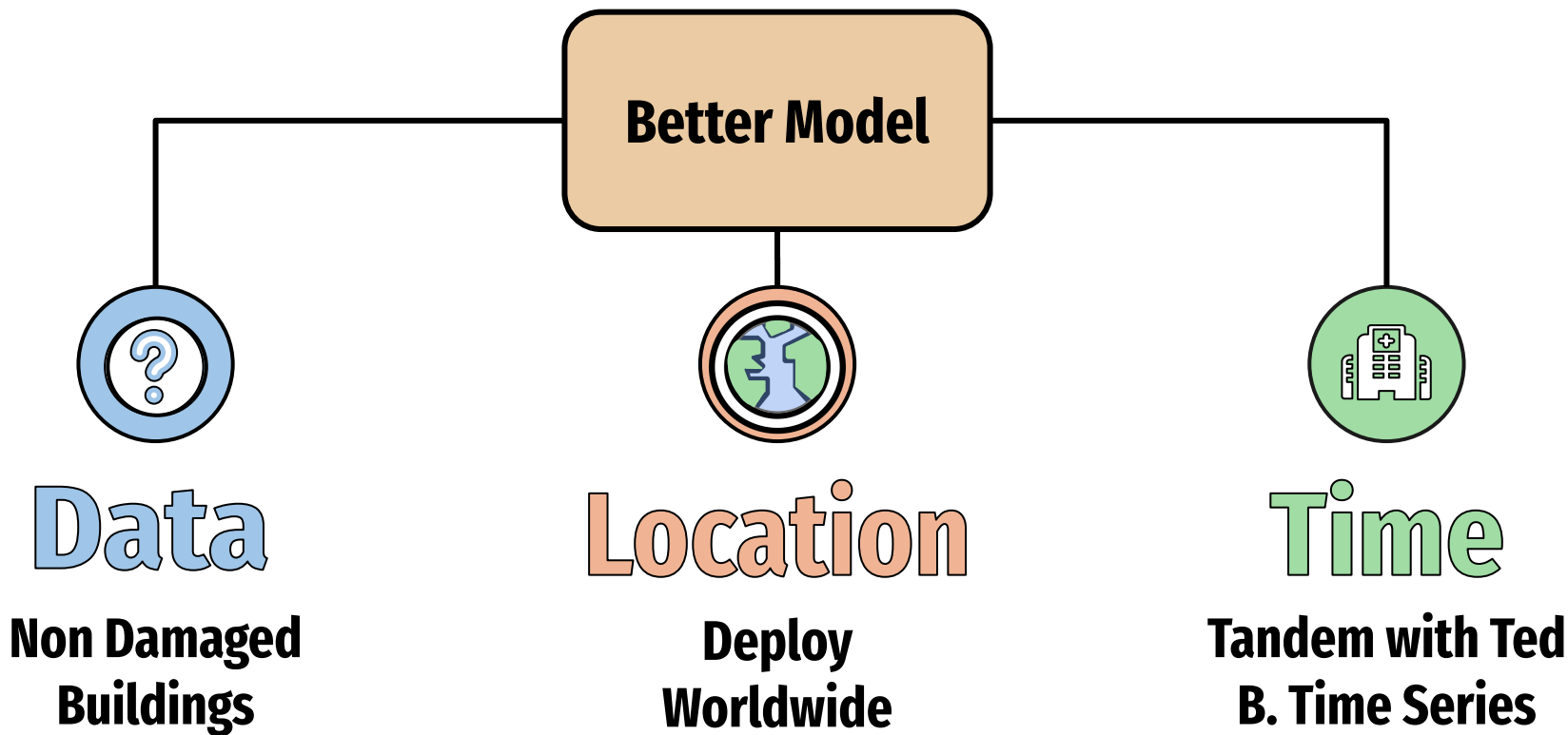
Large Impact



Subsidize

**Encourage Strong
Superstructure**

Future Research



Thank You!

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Email: baekho5767@gmail.com

LinkedIn: <https://www.linkedin.com/in/seung-lee-9976601b7/>



Appendix

Data Source

**Data was sourced from the 2015 Nepal Earthquake Open Data Portal.
For more info, [click here](#)**



Earthquakes infographics

Richter earthquake magnitude scale

