

Thailand Experience from May 5, 2014 M_w 6.2 Mae Lao Earthquake

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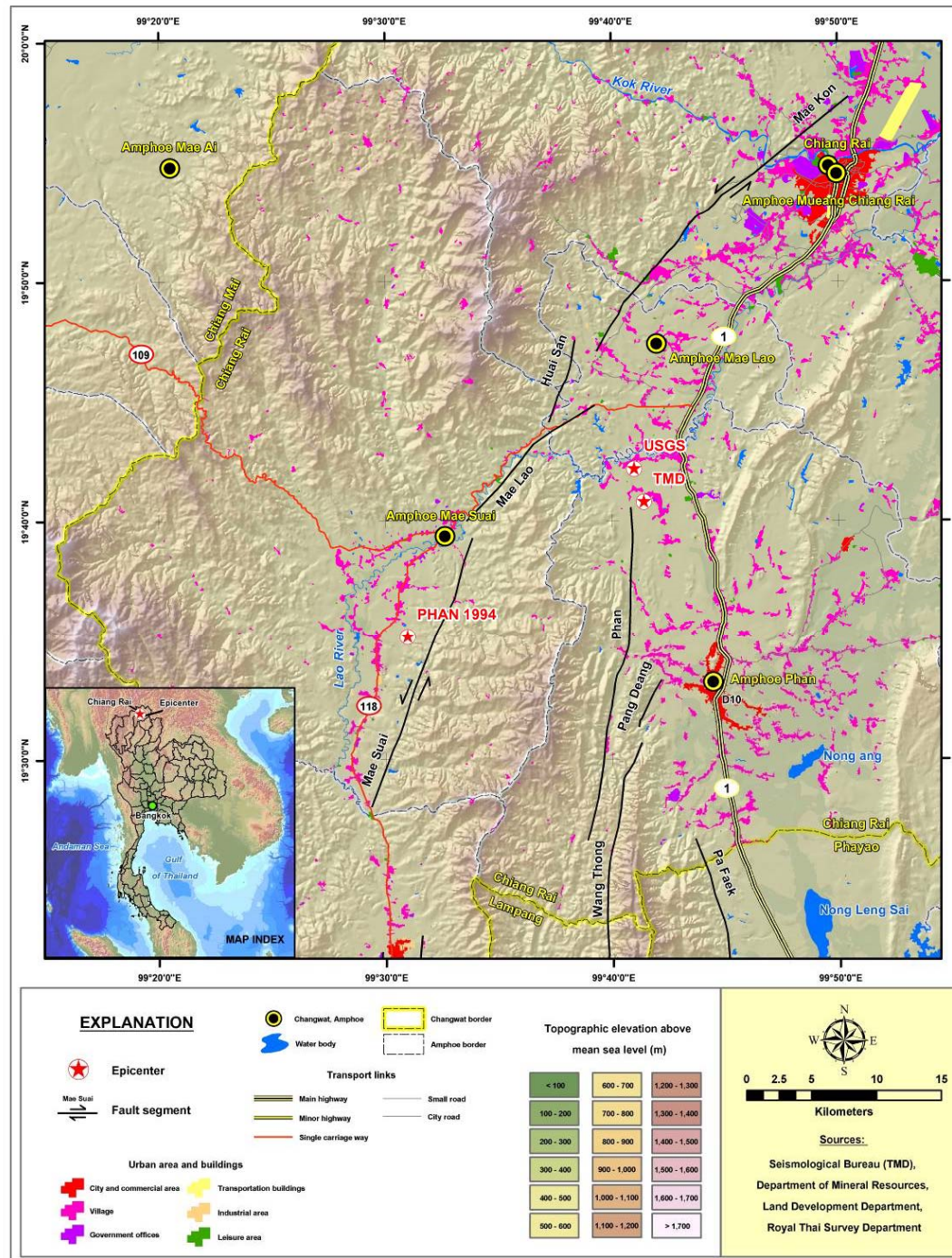
Outline

- Introduction
- Extent of Building Damage
- People's problem
- Remedies
- Future preparation
- Conclusion



Earthquake Event Info

- May 5, 2014 at 11:08:43 UTC (6:08pm local)
- M_L 6.3 (Thai Meteorological Dept.)
- M_w 6.2 (Global CMT)
- Lat 19.71°N , Lon 99.70°E
- 27 km from Chiang Rai City
- 9 km from Mao Lao District
- 19 km from Phan District





Extent of Building Damage

- Damage focused in Mae Lao and Phan Districts
- 10,369 houses were inspected
 - 475 red tags (Unsafe for occupancy)
 - 2,180 yellow tags (Limited use, need major repair)
 - 7,714 green tags (Safe, may suffer minor damage)
- 523 public and religious buildings were inspected
 - 126 red tags
 - 202 yellow tags
 - 195 green tags

Collapsed buildings in Mae Lao



Damage in Concrete Column and Masonry at the ground level



Toppled brick wall



Damaged School Building



Damaged School Building



Damaged School Building



Damaged Bridge and Transformer





Immediate response

- Fortunately, no casualty was reported
- Road and bridges became operational in a few days.
- Electrical power system became operational in a few hours.
- Sanitary system was not affected significantly.



Problems vs Remedies

Problem

- People did not know if their houses were safe or not. They slept in tents for many weeks.
- Although damage was minor, most people reported their houses as damage hoping for monetary compensation from the government. This may lead to inaccurate allocation of help

Remedy

- Volunteer engineers helped surveyed damaged buildings and initially over-rated the level of damage as red tag.
- Many red tagged houses were later rated green after more experienced authority inspected the buildings again.

Problems vs Remedies

Problem

- People did not know how to properly repair their houses.

Remedy

- Department of Public Work published a booklet informing people how to repair their houses. However, it was still lack of details.
- Information was provided by Engineering Institute of Thailand on their website (www.eit.org)



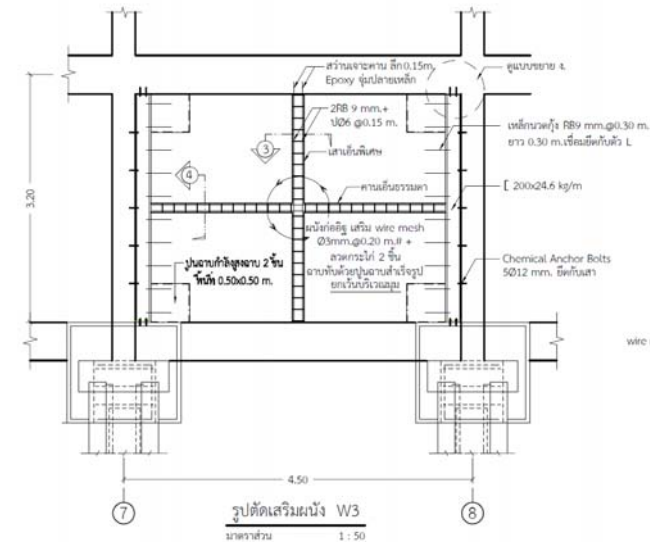
Problems vs Remedies

Problem

- Many school buildings were lost. Children did not have classroom.

Remedy

- HRH Princess Sirindhorn granted fund to rebuild several schools.
- Chulalongkorn University (CU) helped a school in Phan District to investigate damaged building and provide engineering drawing showing how to repair building.
- CU had also make a simple knock-down steel structure for temporary class rooms.





Other problems

- Hundred aftershocks followed and collapsed some previously-standing buildings.
- Some people do not have money to repair their home.

Remedy

- Government gave 30,000 bahts for each collapse house.
- Various charity organizations provided helps in many different ways.



Future Preparation

- Authorities and Academia held a conference on June 30, 2014 to exchange lessons learned from the first damaging earthquake in Thailand.
- Department of Public Work and Town Planning is drafted a new law requiring important structures to be evaluated for seismic safety.
- Large companies start considering to improve seismic safety of their buildings.
- People try to re-build their home following the style of non-damaged neighbors (light cement-wood wall instead of URM) and use larger column piers.