

Proposal of a Comprehensive Approach for Safer Non-engineered Houses

International Video Conference
Reconstruction of Safer Houses after Earthquake Disasters

February 22, 2012
at Tokyo Development Learning Center (TDLC), the World Bank,
Chiyoda, Tokyo, Japan and 12 sub-venues in 9 countries

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Background

- Earthquakes cause serious damages to human societies



Background

Serious Damages of Human Casualties

- Collapse of Houses and Buildings is the main cause of human casualties
- Most of them are non-engineered



Engineer community pays little attention to non-engineered houses stated by UNISDR

“It remains something of a paradox that the failure of non-engineered buildings that kill most people in earthquake attracts the least attention from the engineering profession.”

UNISDR (United Nations International Strategy for Disaster Reduction)
“Living with Risk” 2004 version

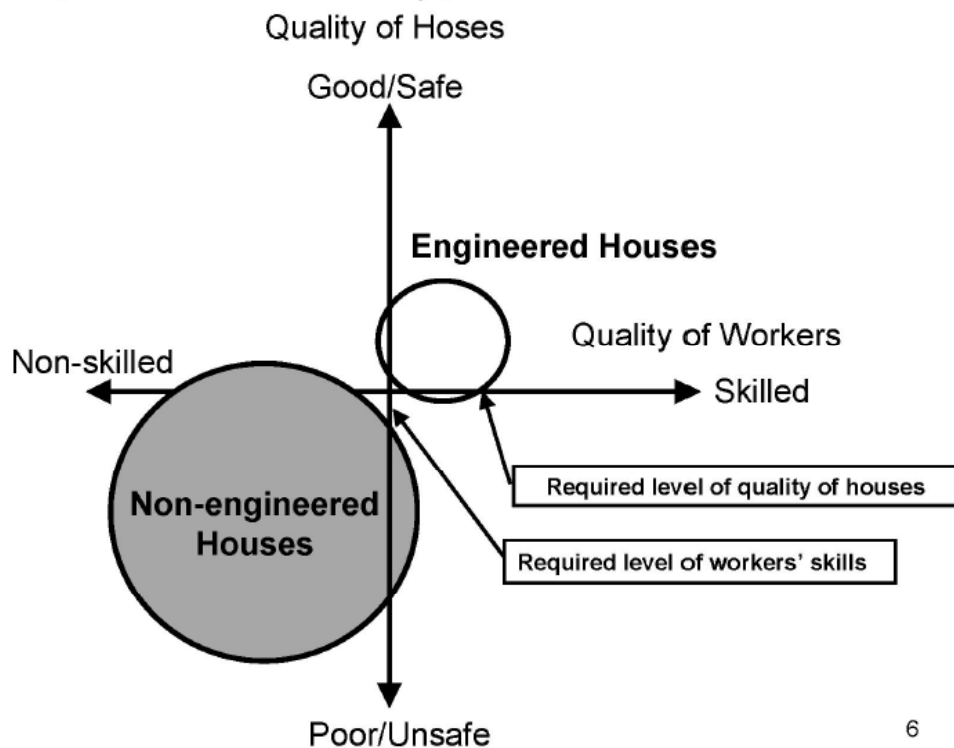
Comparison of two types of structures non-engineered and engineered

Aspects/items	Conventional/non-engineered	Engineered
Materials	Available in the area No control	Usually controlled in size, quality, etc.
Construction workers	Non/semi-skilled workers	Skilled workers
Technical intervention	No/little intervention	Intervention in design, construction procedures, etc.
Users/residents	Low/middle income people	Middle/high income people

- Conventional/non-engineered constructions are completely different from engineered ones
- Each type needs its own appropriate strategy both in Technical solution and Dissemination of technologies

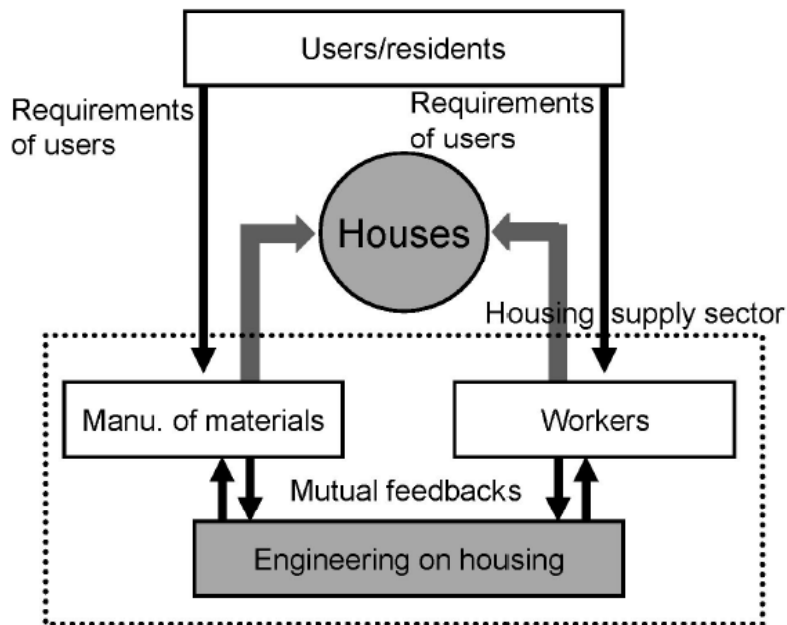
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Comparison of two types of structures



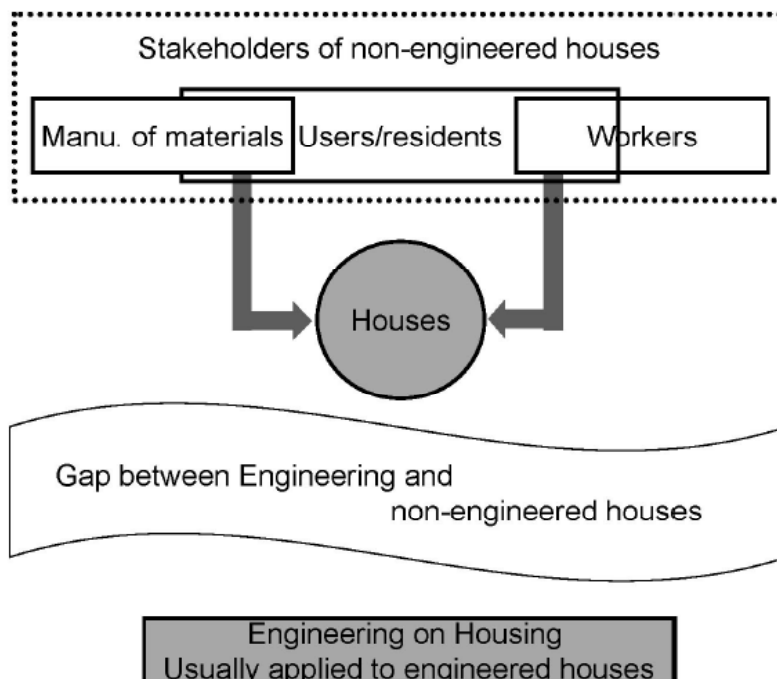
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Relations between stakeholders <Engineered Houses>



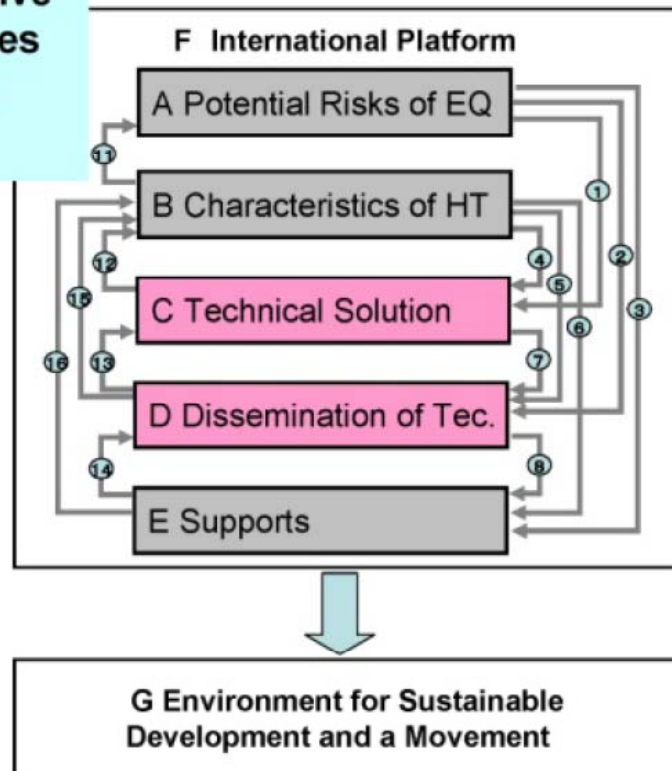
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Relations between stakeholders <No-engineered Houses>



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Comprehensive Approaches is needed



Relations between items

Inputs for other items	
1	Anticipated risks of earthquakes
2	Inputs for enhancing risk recognition
3	Inputs for enhancing risk recognition
4	Technical information for research
5	Technical information for dissemination activities
6	Technical information for designing encouragement
7	Technical contents to be disseminated
8	Inputs for designing encouragement
11	Information of vulnerability of each house type
12	Feedback for verification of technical solution
13	Feedback for verification of dissemination methods
14	Feedback for verification of encouragement
15	Feedback for verification of dissemination methods
16	Feedback for verification of encouragement

Conclusion

- Reduction of disasters of non-engineered houses is very urgent
- Difficulties: it contains technical and also social and economical aspects
- Several initiatives and many enthusiastic people are tackling the tough issue
- Collaboration to share knowledge and lessons is necessary
- Comprehensive approach is highly recommended

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A paper on the comprehensive approach

- A paper was written by 10 co-authors from 5 countries and submitted to an international journal "Journal of Asian Architecture and Building Engineering (JAABE)"
- Title: "A Proposal for a Comprehensive Approach to Safer Non-engineered Houses"
- Available at:
http://www.jstage.jst.go.jp/article/jaabe/9/2/315/_pdf



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