



# Community based seismic retrofitting program for disaster risk reduction

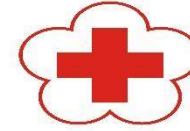
Arwin Soelaksono – American Red Cross



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# **Community Based Seismic Retrofitting Program for Disaster Risk Reduction**

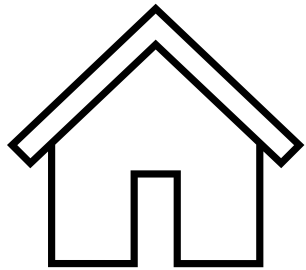
# The gap between code and practical application

## Roof

SNI 3434: 2008  
SNI 7538.1: 2010

## Beam

SNI 15-2094: 2000  
SNI 07-2052: 2002  
SNI 03-0349: 1989



SNI 03-1726-2002, **Design for EQ resistance structure**  
SNI 03-2847-1992, **Design for concrete structure**  
RSNI T – 02 - 2003, **Design for timber structure**

## Column

SNI 2052: 2002  
SNI 07-0053: 1987  
SNI 15-2049: 2004

SNI 03 – 1729 - 2002, **Design for steel structure.**

## Plinth beam

SNI 2052: 2002  
SNI 07-0053: 1987  
SNI 15-2049: 2004

## Foundation

SNI 03-1968: 1900



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# Hidden vulnerabilities in the communities



Photo: Soelaksono, 2020

- Ignorance and negligence exacerbate the existing vulnerabilities of the community.
- Densely populated settlements increases vulnerability to more fatalities.
- Houses were built with limited access to good quality of material and workmanship; and without proper technical assistance.



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# Low demand for seismic retrofitting

- Seismic retrofitting is a process to modify house' elements of already built house to achieve earthquake resistant house.
- Insufficient number of builder with retrofitting skills, make people more likely to prefer to build new houses rather than retrofitting.
- Retrofitting is more common in post-disaster context rather than disaster risk reduction initiatives.
- Retrofitting is not common as a housing cost of a family budget, which means, seismic safety is not a priority.



Photo: SIBAT PMI Banyuwangi, 2021



# Retrofitting by the common people

- Retrofitting always needs proper planning and during implementation should be supervised by skilled and experienced people with engineering background.
- To some extent, people should be able to retrofit their houses but should be done by trained builder and overseen by experienced personnel.
- Community Based Action Team of PMI (Indonesian Red Cross) and local builders had been trained to retrofit houses, and as retrofitting agent they will be able to promote retrofitting to their neighbor.



Photo: Soelaksono, 2020

# Creating a large demand for retrofitting

- Strategic level collaboration on policy formulation for capacity building and access for funding.
- Using the retrofitted houses as retrofitting showcase, campaign was launched to create bandwagon effect in the community.
- Another untapped sources which can be exercised in the future such as supply chain and collaboration with other humanitarian organization.



Photo: Soelaksono, 2020



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# Questions & comments? Please use the chat

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