DISASTER RESILIENCE

ARCASIA COMMITTEE ON SOCIAL RESPONSIBILITY ROUNDTABLE MEETING

HONG KONG

14 SEPTEMBER 2019

Committee on Social Responsibility (ACSR)

Formed during Forum 16, Aug 2011, Danang, Vietnam

Aims & Objectives of ACSR:

- To discuss the importance of Social Responsibility
- To discuss the role of ARCASIA Architects in SR related issues
- To integrate ACSR Program with other ARCASIA Committees
- To establish SR Action Plans amongst ARCASIA Member Institutes

Committee on Social Responsibility (ACSR)

Proposed Topics:

Climate Change

Natural Disasters

Disaster Prevention, Preparedness & Risk Reduction

Aging Population

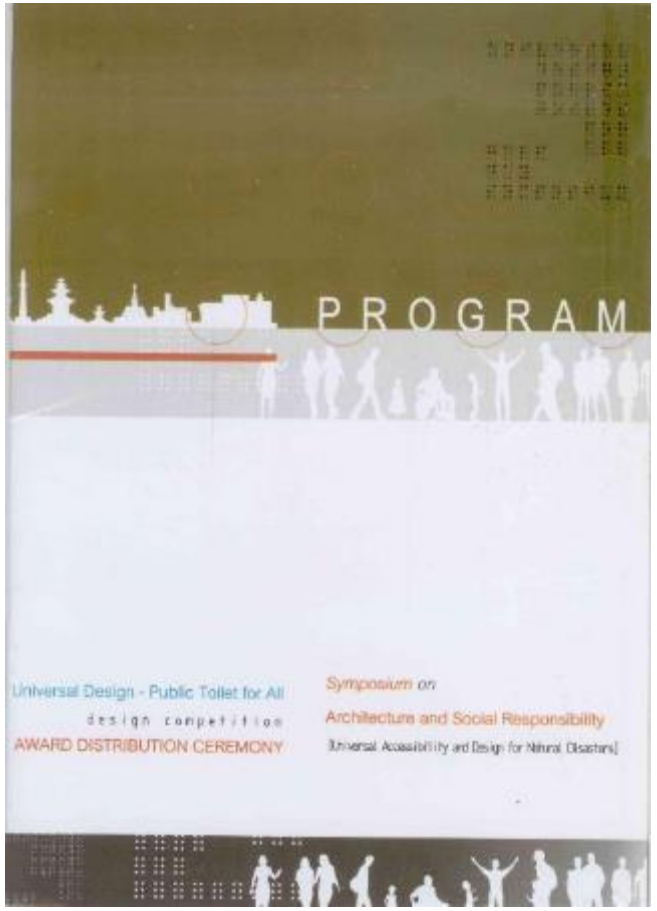
Universal Design (*Inclusive Design for All*)

Architecture for Humanity

Social Housing and Livable Conditions

Heritage and Cultural Conservation

ACSR Symposium
Kathmandu 2013



ACSR Symposium
Kathmandu 2013

"Social responsibility
is something very new and having a charter will help convince governments and clients about what they should be doing"

"WE SHOULDN'T BE DEALING WITH ONLY RICH CLIENTS AND BIG CORPORATIONS BUT WE SHOULD BE ABLE TO SERVE THE OTHER SPECTRUM AS WELL WHERE THERE ARE THE NEEDY"

THT property Plus

"Preparedness is the only way we can combat a natural disaster."
—John Quinlan

ARE WE PREPARED FOR disaster?

Experts stress on the need for the government to wake up to the imminent threat of a major quake hitting Nepal

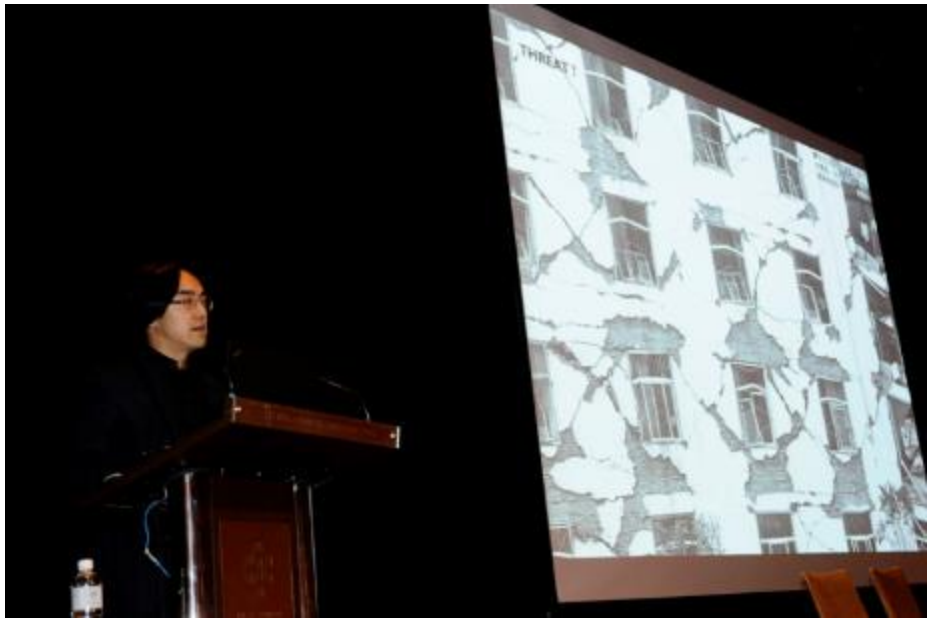
ARCHITECTURE

Change for the better and the worse

Coming to terms with the past is more complex than just preserving monuments and artefacts

What about our cultural heritage?

ACSR Symposium
Kuala Lumpur 2014



ACSR Initiatives

- **ARCASIA Emergency Architects (AEA)**

- **ARCASIA Charter on Social Responsibility**

Types of Natural Disasters

Flood

Earthquake

Landslide

Tsunami

Wildfire

Typhoon

Drought

Nuclear

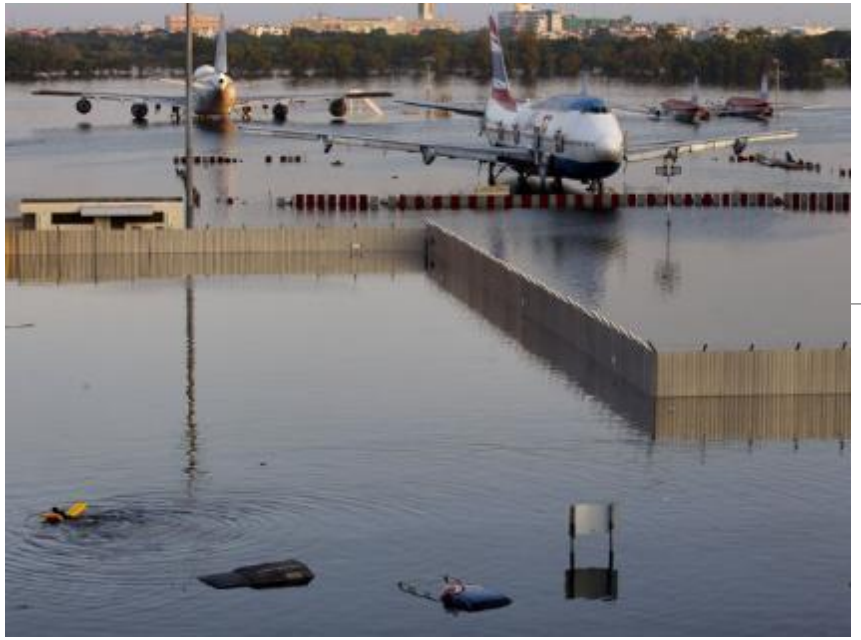
Thailand Floods 2011

Property damage: 1,425 billion baht (US$45.7 Bn)

Deaths: 815

Date: Jul 2011 – Jan 2012 (175 days)

Location: 65 of Thailand's 77 Provinces



Black Saturday Bush Fires Victoria 2009

Typhoon Haiyan 2013

Total fatalities: 6,340

Highest wind speed: 315 km/h

Date: 2-11 Nov 2013

Category: Category 5 Super Typhoon

Affected areas: Philippines, Micronesia, Vietnam


DigitalGlobe

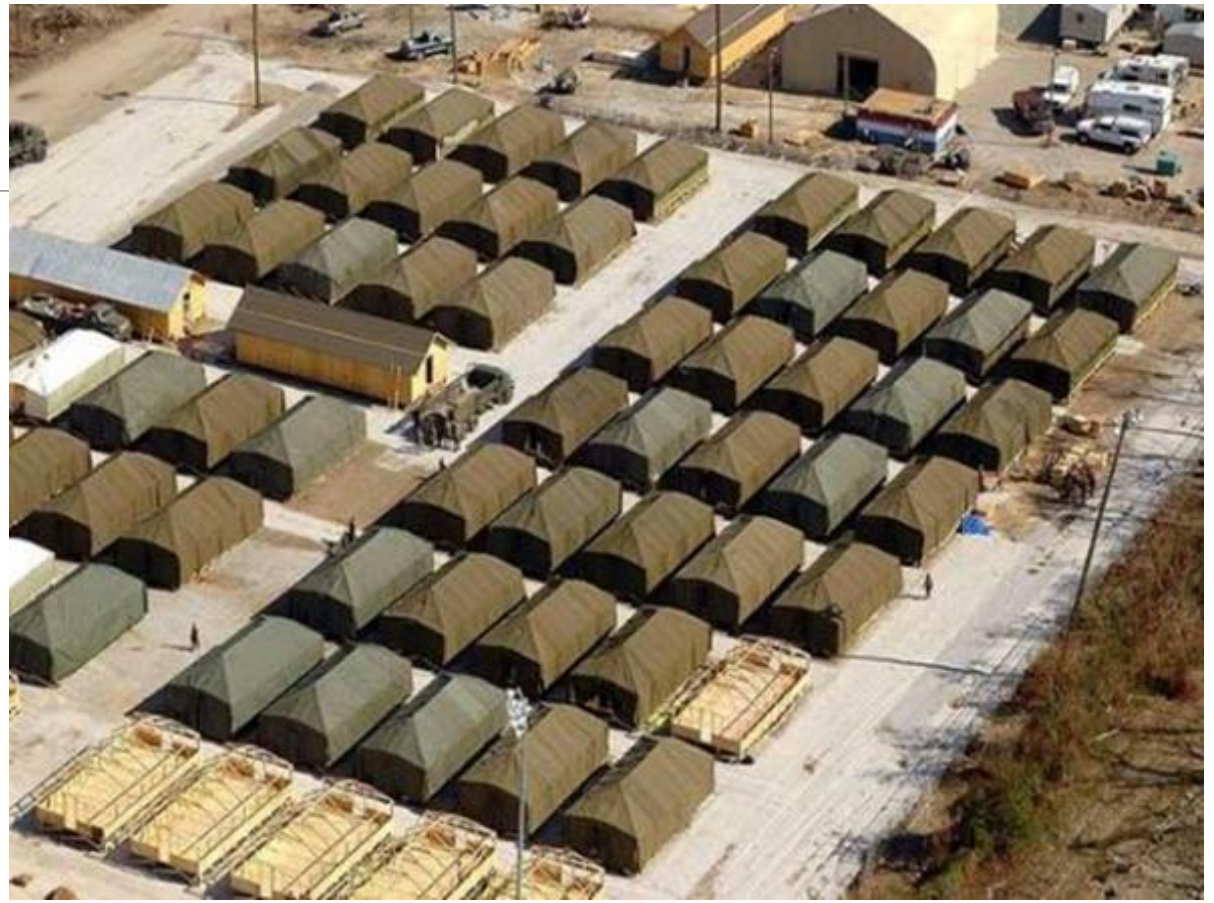
United States

2005 - 2008

5 Hurricanes

Louisiana
Mississippi
Alabama
Kentucky
Georgia

Emergency Shelter for 45,000



Emergency Shelter for 100,000

Taiwan

21 May 1999

Taiwan

7.3 on Richter scale
2,378 deaths
6,534 casualties
40,845 homes destroyed
41,373 damaged

Kobe Japan

17 January 1995

Kobe Japan

7.2 on Richter scale
6,434 deaths
43,792 casualties
320,000 rehoused

Shigeru Ban: paper log house

512 Sichuan Earthquake

12 May 2012

Wenchuan, Sichuan Province, China

8.0 on Richter scale

Over 100,000 casualties

Over 80% buildings were destroyed

Nepal Earthquake - April 2015

Nepal Earthquake

7.8 magnitude earthquake devastated many parts of Nepal on 25th April 2015

Nepal lost more than 8,000 people with 15,000 injured

300,000 homes and 15,000 schools destroyed

Loss of Heritage and Cultural Monuments

A Better Way to Rebuild Nepal

The post disaster reconstruction can **help end, not fuel**, aid dependency

Nepal Needs

- Nepal says it needs around **$6.7 billion** to recover from the April disaster, which killed more than **8,800** people, destroyed nearly **half a million houses** and left thousands in need of food, clean water and shelter
- In total, more than **three-quarters of the buildings** in Nepal's capital, Kathmandu, are uninhabitable or unsafe. Government officials have tallied 153,000 buildings in ruins across the country, with 170,000 more damaged
- Estimates of post-quake reconstruction run as high as $10 billion, about **half of the country's annual economic output**

Reasons for Establishing Emergency Architects

Over past decades, the number of natural disasters has increased tremendously Each month a new disaster occurs somewhere in the world causing huge damage to the infrastructure and also to the economy

Emergency architects working with governments and international NGOs craft new shelters for the homeless affected by hurricanes, earthquake, tsunamis, armed conflicts, floods, chemical explosions and other catastrophes

The main function includes emergency architecture planning and project management services for disaster reconstruction and development

A number of emergency architect organizations also facilitate construction volunteering

What is an Emergency Architect ?

Emergency architects are professional experts who offer their services for areas that are affected by natural disasters or armed conflicts

Many non-profit, private and government organizations collaborated with architecture firms to help in development of the affected areas

Functions

Architects, planners, and engineers have used their professional expertise (knowledge of risk prevention and of building) **to provide sustainable and appropriate assistance to the populations affected by technological** (chemical factory explosion), **human** (civil) and **natural disasters** (tsunami, earthquake)

Always work with local populations and use local materials in their buildings

Advantages

The role of emergency architects is to facilitate growth from within the community, improve the current infrastructure and enhance the sustainable growth. It often encourages active community participation by contributing their significant services to help sheltering the victims of natural disasters

Today, the emergency architect has become one of the most promising and influencing domain for the nations throughout the world especially for those who are more vulnerable towards the natural catastrophic situations

Emergency Architects globally

Emergency Architects Foundation (EAF)

created by Patrick Coulombel (architect) in Amiens France in April 2001

Emergency Architects Australia (EAA)

was started in 2005

Emergency Architects Canada (EAC)

was founded in 2007

Emergency Architects has already led 28 actions in 24 countries

made more than 39,600 assessments and about 8,500 buildings

Aims

The main objectives of **ARCASIA Emergency Architects** are:

to support and develop architects' ***humanitarian engagement*** in Asia Pacific, thus to contribute to the development of architecture

to train architects with skills to ***help populations affected by natural***, technological or human disasters

to ***preserve and promote architectural, historical and cultural world heritage***

Rebuilding

Help to rebuild sustainable and decent housing and restore basic economic and education infrastructure

Re-house displaced populations

Risk Prevention

Analyse relevant environmental, urban, technological and architectural factors with regards to rebuilding safely

Capacity Building

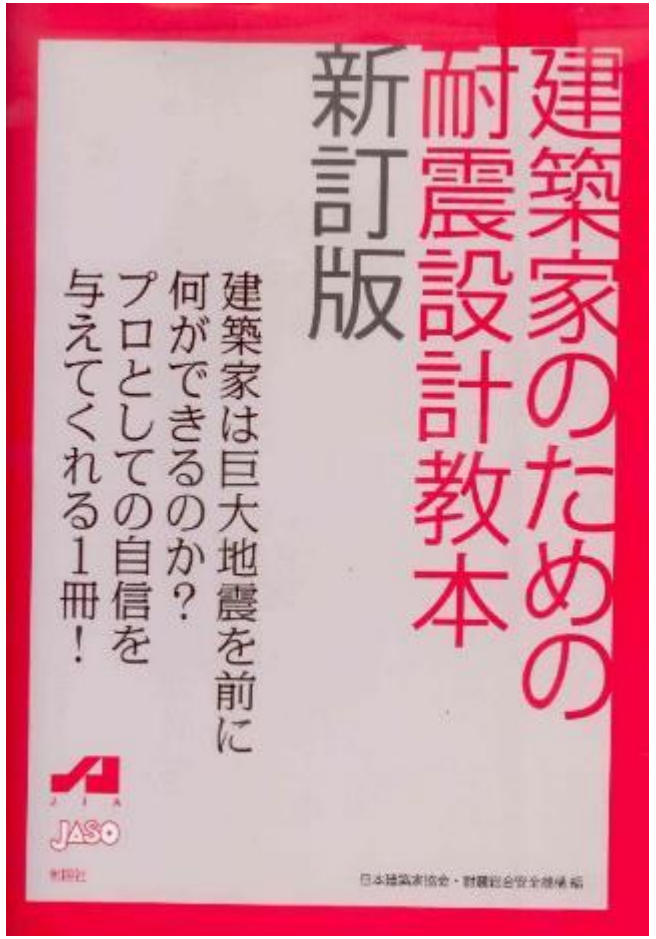
Preserve traditional know-how while adding features to make them **resilient** and **resistant** to future disasters

Promote the Training of Locals

from masons to architects

Masons
Carpenters
Electricians
Plumbers
Planners
Architect
Engineers

Publications on Quake Design



Disaster Assistance Handbook

Third Edition, March 2017

AIA

AIA

Get involved with disaster assistance

BEFORE

CONNECT
with your local Disaster Assistance Program through state or local AIA chapters.

If a local program doesn't already exist, consider spearheading one; see page 103.

COORDINATE
with your state or local chapter to institute the five components of a State Disaster Assistance Program.

Learn the disaster assistance essentials on page 54.

DEVELOP
relationships with state officials and the community—well in advance of a disaster.

Find out who your best allies are on page 52.

BUILD
a broad geographic network of volunteers.

When disaster strikes, architects within the affected area will be focused on their own families, homes, and businesses.

Learn about volunteer activation on page 57.

DURING

CONFIRM
that a request for disaster assistance has been made by the authority.

Follow the disaster protocol on page 73.

LEARN
what certification and training is needed to serve your community in an emergency on page 70.

PROTECT
your personal safety and professional liability if you're volunteering in a disaster response effort.

Learn how on page 72.

COMPARE
your state's Good Samaritan legislation on page 116.

AFTER

UNDERSTAND
local recovery challenges and community needs.

Case studies of common hurdles and unexpected opportunities featured on page 88.

PREVENT
the next hazard from becoming a disaster.

Employ hazard mitigation tactics on page 42.

RENEW
your community by choosing wisely to repair, rebuild, retrofit or relocate.

Learn about recovery options on page 95.

ANYTIME

REDUCE RISK
of disaster by evaluating how vulnerable you and your clients are.

Find the data you need to prioritize hazard mitigation design decisions on page 41.

PARTICIPATE
in community hazard, disaster recovery and resilience planning and policy efforts to create a more sustainable community.

See policy efforts outlined on page 33.

GET INVOLVED
in your community's adoption, application, and enforcement of building codes and standards on page 38.

FOR FULL ACCESS, VISIT AIA.ORG/DISASTERASSISTANCEHANDBOOK

04 **Introduction**

11 **Chapter I: Hazard, vulnerability, and risk**
- Hazards, hazard events, and disasters
- Understanding hazard and disaster risk
- Hazards: causes of damage, impact modifiers, and climate change
- Hazard multipliers: secondary hazards
- Built environment hazard impacts
- Financial and environmental impacts
- Classification of natural hazard events: minor, major and catastrophic events
- Emergency management stages and the benefits of resilience and adaptation

28 **Chapter 2: Hazard risk reduction and mitigation**
- The value of hazard risk reduction and mitigation
- Federal, state, and local hazard mitigation
- Role of land use and zoning: complexities of urban and rural communities
- Hazard mitigation at scale: regional, local, neighborhood, and site
- Relationship of contemporary codes and disaster resistance
- Risk reduction tactics in the built environment
- Building vulnerability assessments
- Design for hazard mitigation: technical guidance, tools, and rating systems
- Leveraging financial incentives in design for construction and operations
- Risk transfer and insurance
- Advocating for community resilience through hazard mitigation

49 **Chapter 3: Emergency and disaster preparedness**
- The National Preparedness System
- Partnerships in preparedness
- Emergency preparedness plans and business continuity plans
- AIA State Disaster Assistance Program: Preparing to provide building safety assessments
- Policy and advocacy for enhanced disaster preparedness
- Community Emergency Response Teams (CERT)

64 - Disaster and hazard scenario planning, drills, and exercises

Chapter 4: Disaster response
- Federal, state, and local government roles
- Authorizing aid: Volunteers and the Emergency Management Assistance Compact
- Assessing the post-disaster building stock
- Mobilization of volunteers
- Post-Disaster Building Safety (or Rapid) Assessments
- Detailed and Engineering Assessments of buildings post-disaster

85 **Chapter 5: Disaster recovery**
- Challenges to building back better
- Temporary shelters and transitional housing
- Government-sponsored repair and rebuilding programs
- Policy and advocacy
- Education and technical assistance
- Stakeholder engagement and community planning

102 **Appendix A: AIA member groups to connect with**

107 **Appendix B: Risk reduction and hazard mitigation resources**

116 **Appendix C: Emergency and disaster preparedness resources**

122 **Appendix D: Disaster response resources**

AIA's Disaster Assistance Program

AIA Architects Respond to Disasters

Architects can use their building knowledge to help their communities both before and after a disaster. AIA's Disaster Assistance Program supports Components and equips architects with the knowledge and skills to mitigate, prepare for, respond to, and recover from a disaster.

Since 1972, the program has ensured that AIA, Chapters, and members are prepared to assist communities nationwide and internationally in leadership and volunteer roles. At the request of a state or local jurisdiction, our members are trained to serve as volunteers to perform rapid or building safety assessments in their communities following a disaster.

Learn about the important role of architects in disasters

Want to prepare for the hazards in your own back yard and be ready to respond as a “citizen architect” to help your community recover from a hazard event? Connect with your local or state AIA chapter to inquire about your state’s disaster assistance program. A directory of chapter committees can be found in the Appendix of the 3rd Edition of the AIA Disaster Assistance Handbook.

Disaster Assistance Program

The AIA Disaster Assistance Program supports chapters and equips architects with the knowledge and skills to mitigate, prepare for, respond to, and recover from a disaster. Since 1972, the program has ensured that AIA, Chapters, and members are prepared to assist communities nationwide and internationally in leadership and volunteer roles.

Register for a Safety Assessment Program training in your area

HISTORY OF AIA DISASTER ASSISTANCE

1972
AIA formally recognizes the role of architects in emergency response

1974
The Disaster Relief Act of 1974 establishes the presidential declaration process for federal disaster aid

1978
The Federal Emergency Management Agency (FEMA) is created as an independent agency

1988
Congress passes the Stafford Act to codify the federal role in disaster assistance and improve planning, preparedness, and coordination

2005
Hurricane Katrina strikes the United States, raising awareness of disaster risk in the built environment

2006
AIA establishes the Disaster Assistance Program and appoints a Disaster Assistance Committee to lead the charge

AIA creates the Disaster Assistance Comprehensive Response System

AIA develops model Good Samaritan legislation for licensed architects

2008
AIA Disaster Assistance Committee launches the AIA Safety Assessment Program, uniformly training architects, engineers, and building inspectors in post-disaster building assessments

2010
AIA Disaster Assistance Committee launches AIA State Disaster Coordinator Network to facilitate AIA engagement in disaster preparedness and response efforts on a state level

2011
AIA joins the Buildstrong Coalition of designers, first responders, and insurance industry representatives to advocate for safer building codes and improvements to federal disaster programs

2012
AIA partners with the former Architecture for Humanity to offer the AIA/AFH Disaster Response Plan Grant to empower chapters to work with local government agencies on planning, training and other critical disaster relief initiatives.

2013
AIA hosts the Designing Recovery Competition, an ideas competition aimed at designing disaster-responsive homes for New York City, NY, New Orleans, LA and Joplin, Mo

2014
AIA Board of Directors adopts position statement on resilience to address the impacts of an increasing number of natural disasters, climate change, environmental degradation, and population growth

AIA co-authors the Building Industry Statement on Resilience; a guiding document for industry leaders to enhance the resilience of the built environment

2017
AIA Disaster Assistance Handbook V3

THE AMERICAN INSTITUTE OF ARCHITECTS: Disaster Assistance Program

[Safety Assessment Program] SAP Training

Post-disaster Safety-Assessment Program (SAP) training provides architects, engineers, and building inspectors with the knowledge to provide evaluations of facilities and buildings in the aftermath of a disaster.

ELIGIBLE PARTICIPANTS//

All building industry professionals are welcome and will receive a class attendance certificate. In addition, certain licensed practitioners will be eligible to perform post-disaster assessments after successfully completing SAP training as certified Building Evaluators:

- Licensed architects
- Registered civil, structural, or geotechnical engineers
- Certified building inspectors

CERTIFICATION PROCESS//

In 2008 AIA adopted and adapted California's Office of Emergency Services (Cal OES) Safety Assessment Program (SAP) as the official AIA all-hazards post-disaster training.

After successfully completing AIA's SAP training, eligible individuals will earn a California-issued registration ID card. This nationally recognized certification is often required training for volunteer building safety evaluators nationwide.

PROGRAM DETAILS//

This full day, in-person, all-hazards, training course will include the SAP Building Evaluator Manual. Attendees will receive one field manual from the Applied Technology Council (ATC):

ATC-45 Safety Evaluation of Buildings after Windstorms and Flood; or ATC-20 Postearthquake Safety Evaluation of Buildings.

AIA SAP instructors will share personal experiences from the field and will walk attendees through interactive case studies. Attendees will understand chain of command in declared disasters and safety precautions to deploy into the field.

6.5 AIA HSW CEUs will be earned.

ENGAGE //

Interested in attending a training in your area? Contact resilience@aia.org

Community Resilience Planning Resources

Planning resources for local planners to define vulnerabilities, involve community members, and design for resiliency.

Find by Planning Topic

- Vulnerable Populations
- Design Thinking
- Collaboration
- Community Engagement
- Tools and Assessments
- Performance Measurement
- Funding and Program Alignment

Resilient Design Solutions

Climate Change Adaptation and Resilience Case Studies Series

This case study series highlights climate change adaptation and resilience work in the transportation sector.

Date Published: July 2016

North Atlantic Coast Comprehensive Study Report

This report provides communities information on changing flood risks associated with with climate change. It also provides tools to help communities prepare for future flood risks.

Date Published: January 2015

Community Resilience Success Stories
Planning Guide
Volume I
Community Resilience Planning Guide Volume I - Español
Volume II
Community Resilience Planning Guide Volume II - Español
Planning Guide FAQ
Community Resilience Planning Guide 4 Page Brochure
Community Resilience 12 Page Brochure
Performance Guide Table Template
Planning Guide Briefs
Economic Decision Guide
Community Resilience Data Workshop
Program and Project Descriptions
Community Resilience Publications
NIST Community Resilience Fellows
Panel for Buildings and Infrastructure Systems
Center of Excellence (CoE)

Community Resilience Planning Guide

Natural, technological, and human-caused hazards take a high toll on communities, but the costs in lives, livelihoods and quality of life can be reduced by better managing disaster risks. Planning and implementing prioritized measures can strengthen resilience and improve a community's abilities to continue or restore vital services in a more timely way, and to build back better after damaging events. That makes them better prepared for future events and more attractive to businesses and residents alike.

The NIST Community Resilience Planning Guide for Buildings and Infrastructure Systems (Guide) provides a practical and flexible approach to help all communities improve their resilience by setting priorities and allocating resources to manage risks for their prevailing hazards. Volume I of the Guide describes the six step planning process and provides a worked example to illustrate the process. Volume II is a resource that describes how to characterize the social and economic dimensions of the community, dependencies and cascading consequences, and building and infrastructure performance. Using the Guide can help communities to integrate consistent resilience goals into their comprehensive, economic development, zoning, mitigation, and other local planning activities that impact buildings, public utilities, and other infrastructure systems.

The Guide's six-step process helps communities to think through and plan for their social and economic needs, their particular hazard risks, and recovery of the built environment by:

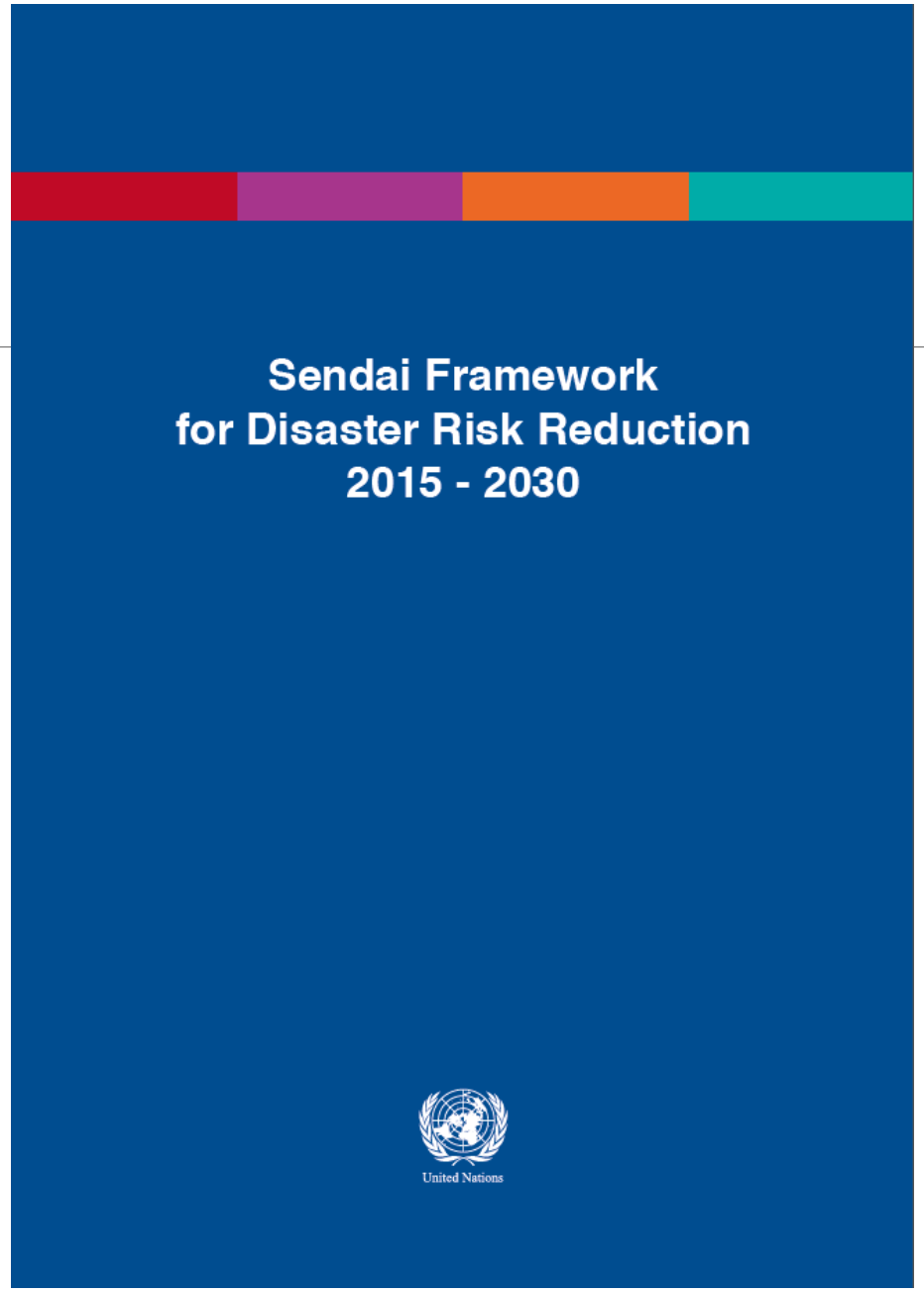
- Setting performance goals for vital social functions—healthcare, education and public safety—and supporting buildings and infrastructure systems - transportation, energy, communications, and water and wastewater
- Recognizing that the community's social and economic needs and functions should drive goal-setting for how the built environment performs
- Providing a comprehensive method to align community priorities and resources with resilience goals

A fictional community, Riverbend, illustrates the six-step process and how resilience can be integrated into community planning.

The Guide was released in late 2015 and is being supplemented by Guide Briefs with more information on supporting methods and best practices.

Building materials, Structural engineering, Community resilience and Disaster & failure studies

Created April 24, 2015, Updated December 10, 2018



Sendai Framework
for Disaster Risk Reduction
2015-2030

Contents

Preamble

Expected outcome and goal

Guiding principles

Priorities for action

Priority 1: Understanding disaster risk

Priority 2: Strengthening disaster risk governance to manage disaster risk

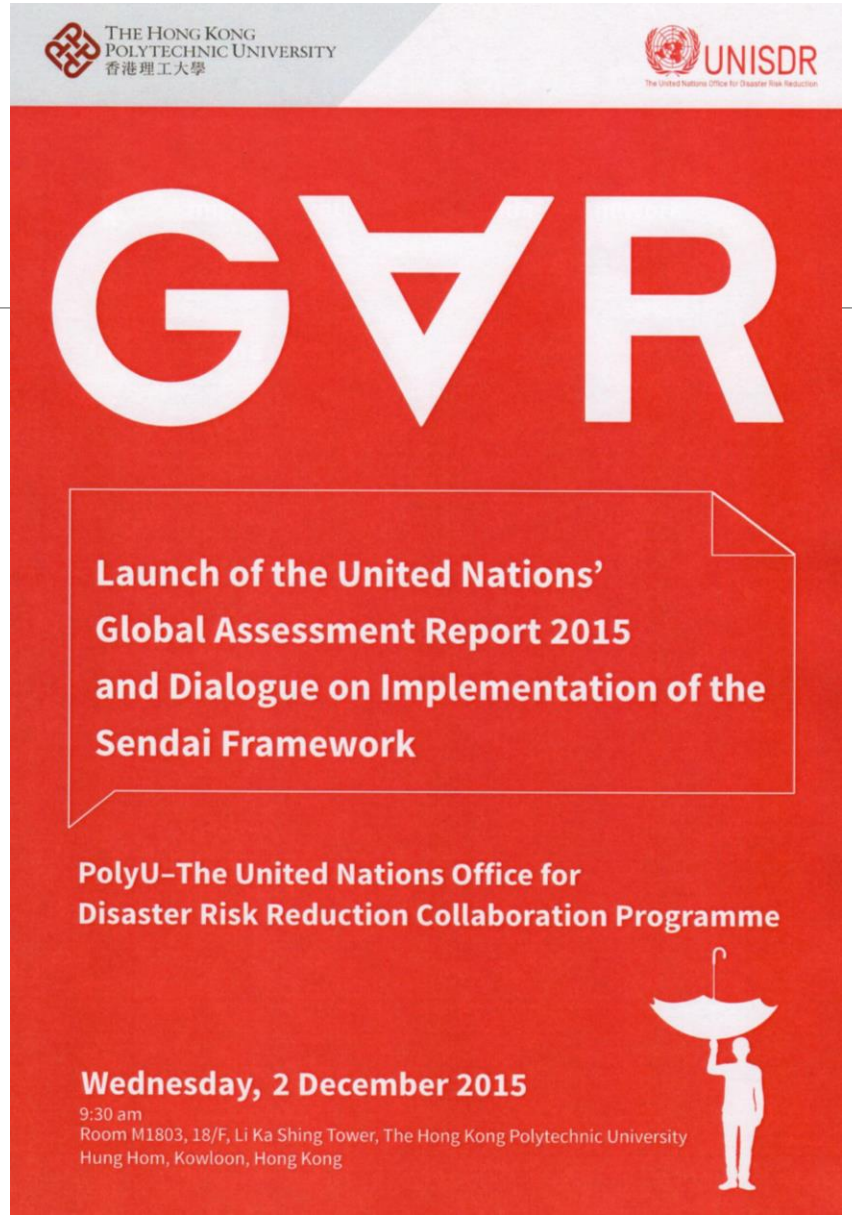
Priority 3: Investing in disaster risk reduction for resilience

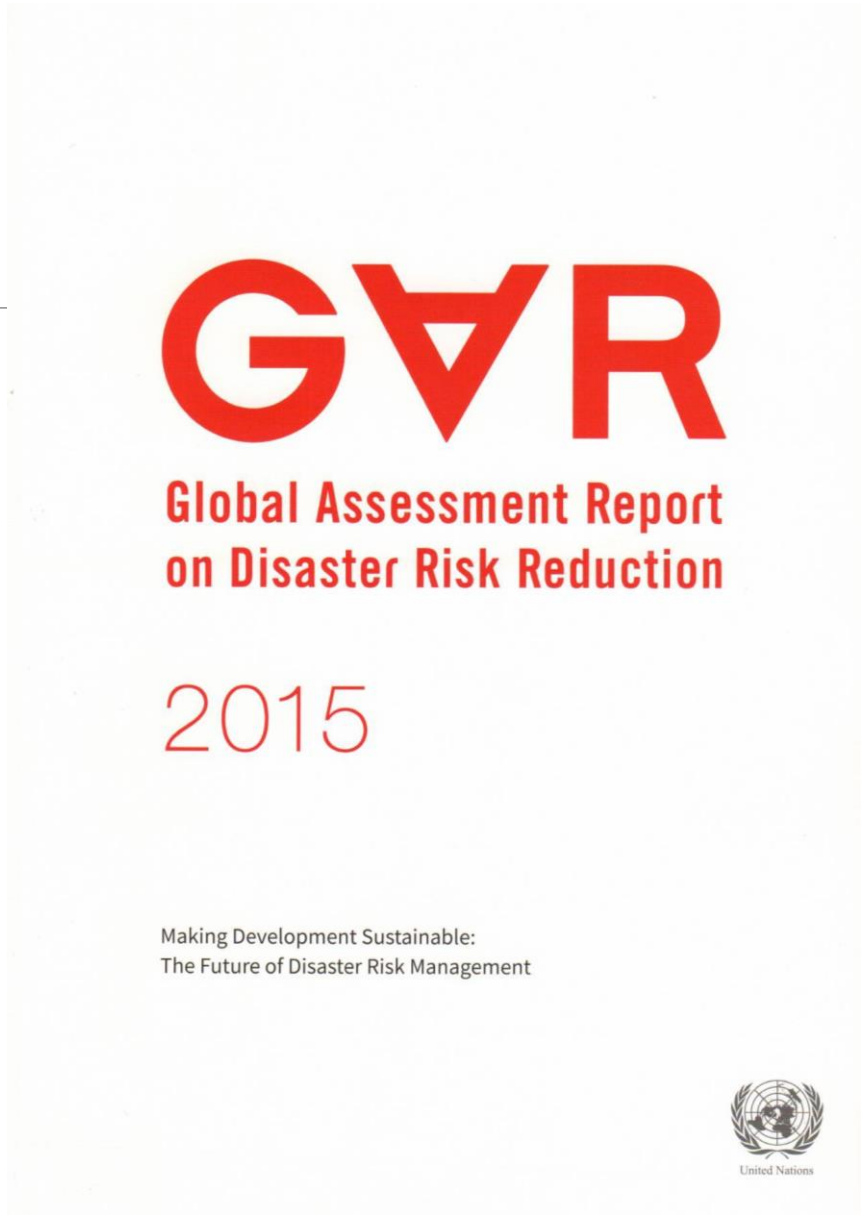
Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

Role of stakeholders

International cooperation and global partnership

Build Back Better


THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學
UNISDR
The United Nations Office for Disaster Risk Reduction
GAR
Launch of the United Nations' Global Assessment Report 2015 and Dialogue on Implementation of the Sendai Framework
PolyU–The United Nations Office for Disaster Risk Reduction Collaboration Programme
Wednesday, 2 December 2015
9:30 am
Room M1803, 18/F, Li Ka Shing Tower, The Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong


GAR
Global Assessment Report on Disaster Risk Reduction
2015
Making Development Sustainable:
The Future of Disaster Risk Management
United Nations

DISABILITY INCLUSIVE DISASTER RISK MANAGEMENT

VOICES FROM THE FIELD & GOOD PRACTICES

Disability inclusive DRR Network

cbm
together we can do more

CSR ASIA | Forum

PRUDENCE FOUNDATION

DISASTER PREPAREDNESS FORUM 2016

BUILD BETTER NOW
BANGKOK
10 NOVEMBER 2016

THE DISASTER PREPAREDNESS FORUM 2016: BUILD BETTER NOW

10 November 2016, Grand Hyatt Erawan, Bangkok, Thailand

Now in its fourth year, the Disaster Preparedness Forum will address the need to develop disaster resilient homes and schools for vulnerable communities in Asia at scale. This year's theme "Build Better Now" reflects the significant economic losses and damages in the region due to disasters. It will focus on the need for more strategic and greater investment to make our communities safe and resilient to the devastating impact of disasters.

This one-day event will convene thought leaders, innovators and practitioners from across the region that are helping to progress the vision of disaster resilient homes and schools in Asia. Speakers and participants from government, humanitarian and business sectors will convene to address the fundamental questions and identify potential solutions to the perennial challenge associated with this theme.

Potential Partners - adpc

ARCASIA signed a **Memorandum of Understanding** (MoU) with Asian Disaster Preparedness Center in Ayutthaya in November 2015

Courses - adpc

One-day Course	• Introduction to disaster risk management • The role of architects in DRR • How can architects help? Preparedness via building codes and regulations. Regional/National emergency response mechanism • The build back better concept and case studies from previous disasters	One-off development cost: **US$5,000** Delivery cost per course: **US$2,300** (for 2 trainers) plus travel costs
Four-day T4T Course	• Introduction to disaster risk management • How to train the trainer using this course • The disaster cycle: mitigation, preparedness, relief, reconstruction. • The role of architects across the disaster cycle: **Mitigation** - safe design, building codes, upgrading, retrofitting **Preparedness** – adaptive design, promoting skills within the community **Relief** - temporary shelters, specific needs (gender, disability) **Reconstruction** – building back better, working with communities, community-led design, interdisciplinary working with other service providers, universal design • Hazard specific concepts: Earthquake, Flood, Drought/water table change/subsidence, Slopes, Storms, Fire • Dynamics: Climate change, Land use and urbanization, Universal design • What happens in an emergency response? Global/regional/national emergency response arrangements • Case studies from earlier disaster response, the dos and don'ts • Further information – signposting	One-off development cost: **US$14,000** Delivery cost per course: **US$8,000** (for 3 trainers) plus travel costs

Potential Partners

Habitat for Humanity
Rebuild Homes for Nepalese Earthquake Victims

Amity Foundation
Relief Efforts

Architecture for Humanity

Potential International Partners

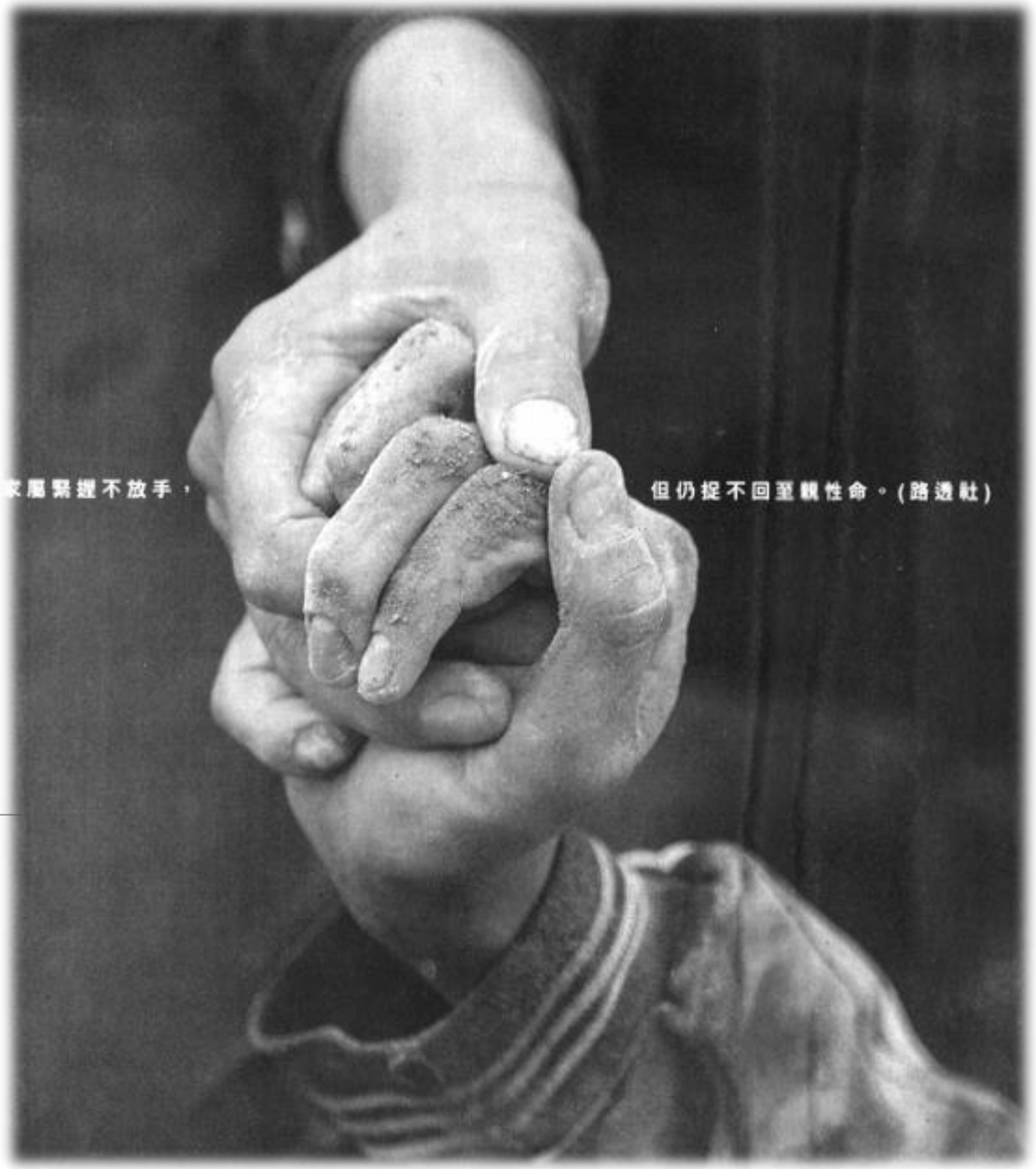
International Union of Architects (UIA)

UN - Economic & Social Commission for Asia and the Pacific (UN-ESCAP)

Rehabilitation International (RI)

RI Task Force on Disability-inclusive Disaster Risk Reduction (DiDRR)

Helping Hand



Thank you

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ACSR Chair 2011-14

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