

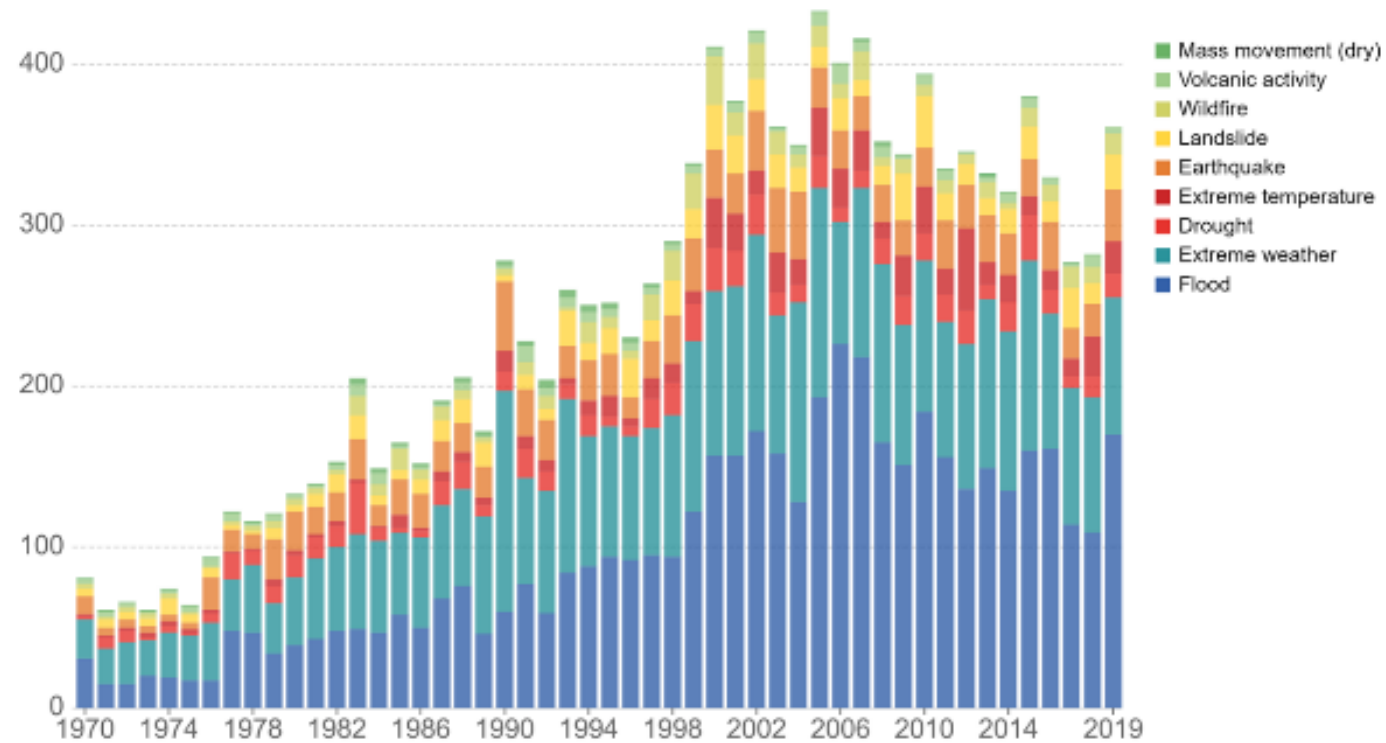


BUILDING RESILIENCE INDEX

LAY THE FOUNDATIONS FOR RESILIENT CITIES,
ONE BUILDING AT A TIME.

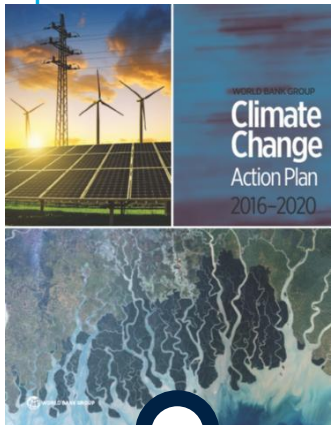


GLOBAL REPORTED NATURAL DISASTERS 1970-2019



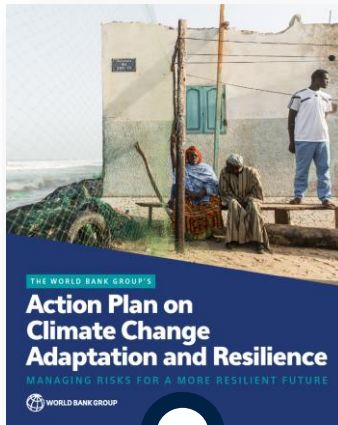
Source: EMDAT (2020): OFDA/CRED International Disaster Database, Université catholique de Louvain – Brussels – Belgium
OurWorldInData.org/natural-disasters • CC BY

BUILDING RESILIENCE INDEX'S RELATION TO WBG STRATEGY



Priority III. Increase its investments with climate co-benefits, focusing on a few high-impact areas and **rebalancing its portfolio with more focus on adaptation and resilience**

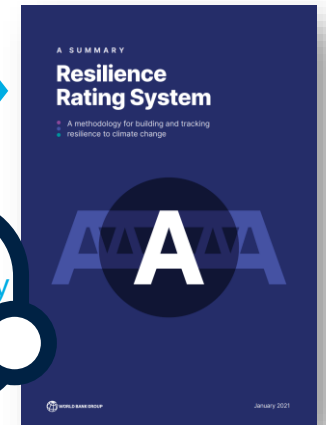
June 2016



Core objectives:

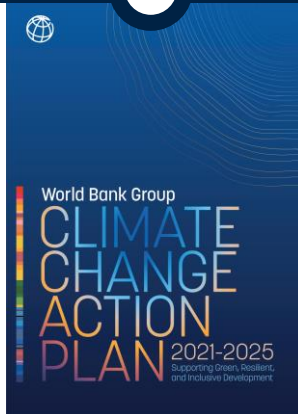
- Boost adaptation financing - direct adaptation climate finance to reach \$50 billion over FY21–25.
- Drive a mainstreamed, whole-of-government programmatic approach
- **Develop a new rating system to incentivize investments in adaptation and resilience and improve tracking.**

January 2019



January 2021

June 2021



- Country Climate and Development Reports (CCDRs)
- **July '23:** 85% of all operations Paris-aligned
- **July '24:** 100% of all operations Paris-aligned
- **Climate finance:** 35% of overall flows
- **Adaptation:** 50% of climate finance (IDA & IBRD)
- **Cities & buildings** are one of the 5 key investment areas
- **Direct reference to Building Resilience Index**

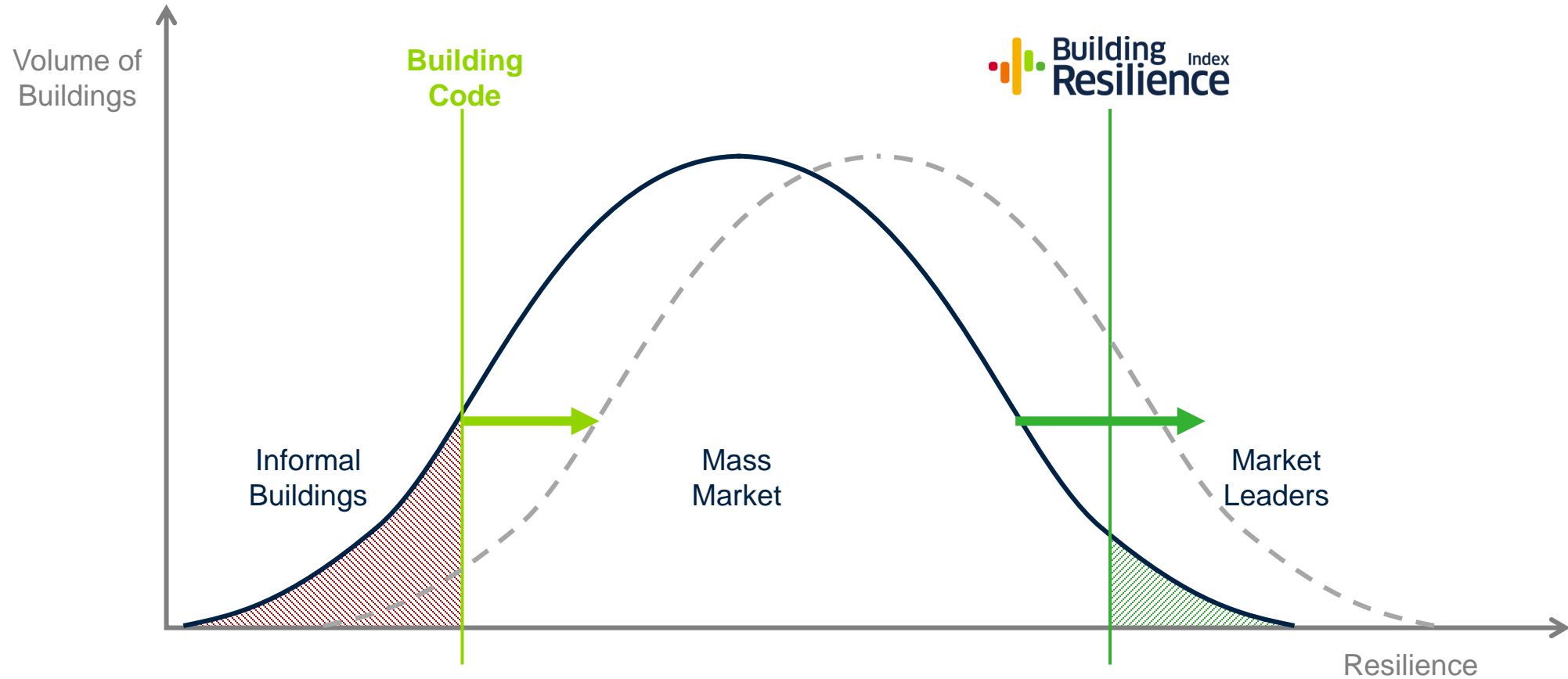


Main approach:

- Resilience of the project
- Resilience through the project
- Letter grade rating system

GOING BEYOND BUILDING CODES

While building codes are essential, they are often designed to save lives, not the assets.



Building Resilience Index is an innovation of IFC, a member of the World Bank Group.



Identify Risk

Identify applicable natural hazards and vulnerabilities based on the location and design of a building.



Manage Risk

Explore a list of risk mitigation measures for enhancing the physical integrity and operational continuity of a building.



Disclose Risk

Communicate the resilience of a building by using a standardized letter grade rating system.



WIND

air motion

- Downburst
- Tornado
- Storm



WATER

liquid motion

- Local/Urban Flooding
- Coastal/Tidal Flooding
- River/Lake Flooding
- Flash Flooding
- Storm Surge
- Tsunami



FIRE

rapid oxidation

- Local Fire
- Wildfire



GEO-SEISMIC

ground motion

- Subsidence
- Volcano
- Landslide
- Earthquake

PHYSICAL INTEGRITY

RATING QUESTION	RESPONSE	COSTS (US\$)	
		DEFAULT	PROJECT
C WT13. Sealed Openings ^ Hide Description The windows and doors are properly installed and sealed to prevent rainwater from infiltrating to the building's interior. + Add Comment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	500,000	500,000
B WT14. Backflow Valves ^ Hide Description If the ground elevation is less than 5 m above sea/lake/river level, backflow valves are installed to wastewater/sewage flow lines to prevent backflow during flooding. + Add Comment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	300,000	300,000

OPERATIONAL CONTINUITY



* Probable Maximum Loss (PML) current replacement cost, including structural and equipment, excluding operational costs

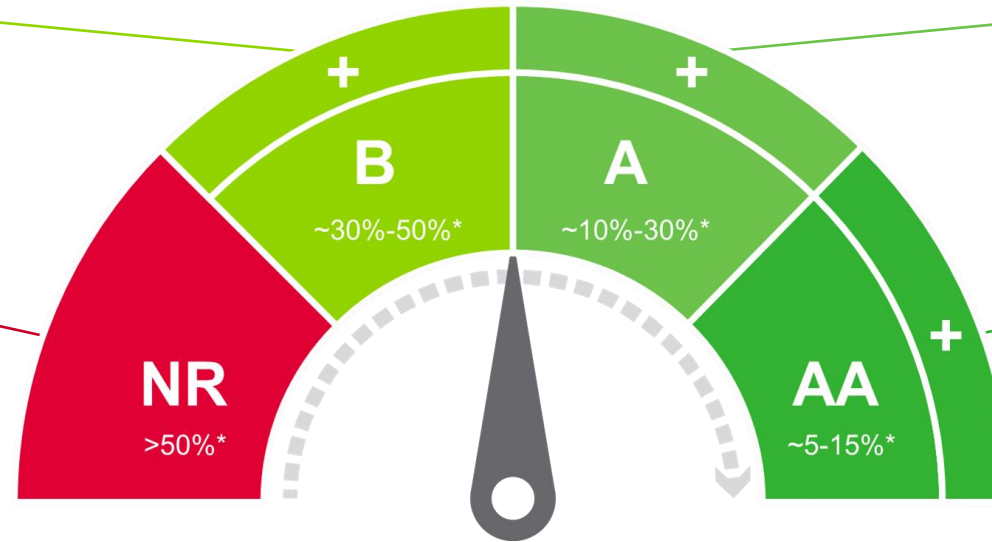
RATING LEVELS OF BUILDING RESILIENCE INDEX

The building fails to incorporate **most recommended resilience practices** of Building Resilience Index. It will likely **not withstand** most applicable hazards, even at moderate level.

The building incorporates **some recommended resilience practices** of Building Resilience Index. It will likely withstand some applicable hazards at a moderate level.

The building incorporates **most recommended resilience practices** of Building Resilience Index. It will likely withstand some applicable hazards at a moderate-high level.

The building incorporates **ALL recommended resilience practices** of Building Resilience Index for all applicable hazards, which are generally set above the local building standards. It will likely withstand all applicable hazards at high level.



The rating followed by **'+' indicates** that the building meets all requirements of the identified Building Resilience Index rating, plus **recommended operational continuity measures**.

* Probable Maximum Loss (PML) current replacement cost, including structural and equipment, excluding operational costs.

NEW BUILDINGS & RETROFITING EXISTING BUILDINGS



RESIDENTIAL



OFFICE



RETAIL



HOTEL/RESORT



SCHOOL



HOSPITAL



UNIVERSITY



WAREHOUSE



INDUSTRIAL



MIXED USE



AIRPORT



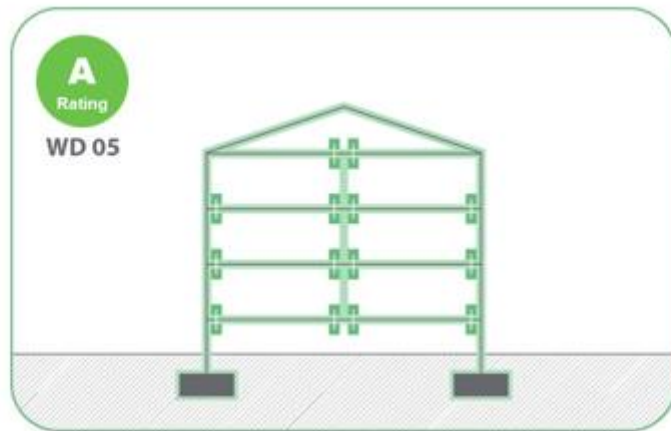
PORT

RISK MITIGATION MEASURES

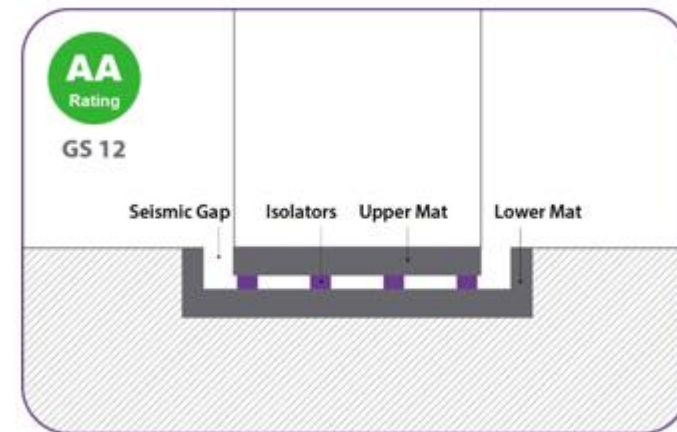
- Site Selection
- Foundation
- Structural Design
- Mechanical, Electrical and Plumbing Systems Design & Installation
- Material Selection
- Landscape & Site Design
- Design Review
- Construction Audit

EXAMPLES OF MITIGATION MEASURES

WD05. Well-connected Structure



GS12. Structure with Seismic Base Isolation



Complexity

WAYS TO BENEFIT FROM THE BUILDING RESILIENCE INDEX



CONSTRUCTION DEVELOPERS

- Assess and improve resilience to site-specific natural hazards
- Disclose resilience rating to your financiers, insurers, and users
- Differentiate your brand as a developer of resilient buildings



BANKS

- Make informed investment decisions based on climate risks on buildings
- Save time and resources on project evaluation processes
- Reduce property investor risk exposure



INSURANCE COMPANIES

- Complement catastrophe modeling with a multi-hazard approach
- Review resilience rating of assets before underwriting
- Save time and resources on project evaluation processes



GOVERNMENTS & LOCAL AUTHORITIES

- Create skills in the market for more resilient construction practices
- Reduce repetitive costs of post-disaster recovery and reconstruction
- Create an enabling environment for mainstreaming resilient buildings



PROPERTY BUYERS & OWNERS

- Make informed investment or retrofit decisions
- Learn the resilience value of your investment
- Minimize operational disruptions and insurance costs



OCCUPANTS & LESSORS

- Choose to live and work in safer buildings
- Minimize operational disruptions
- Reduce risk of losses due to natural disasters