

# Risk Reduction in the Built Environment through Resilient building regulation



BCO CONVENTION , 24 November 2016, themed Resilient Built Environment Management for life

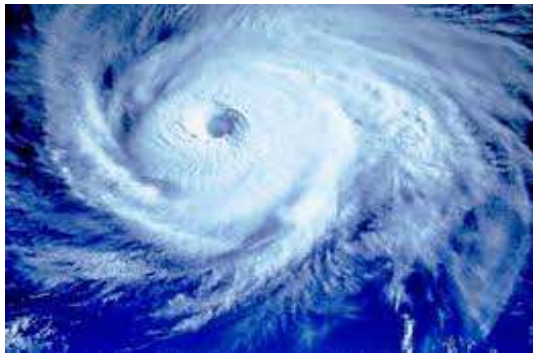
# Outline of the Presentation

- Context of the presentation
- Causes of Risks in the Built Environment
- South Africa's Risk Profile
- Recent Risks
- Barriers to attaining resilient buildings
- How municipals can make a difference
- Conclusions

## Definition of terms

- Resilient: 1. able to become strong, healthy, or successful again after something bad happens (Merriam-Webster Dictionary) 2. able to withstand or recover quickly from difficult conditions (Oxford dictionary)
- Risk Reduction: Taking precautionary measures to reduce the likelihood of a loss, or to reduce the severity of a possible loss.
- Building Regulation define how a new building or alteration is to be built so that it is structurally safe, protected from risk of fire, energy efficient and has adequate ventilation for its purpose.
- Resilient risk reduction is defined as: “The concept and practice of reducing risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (Turnbull et al, 2013).

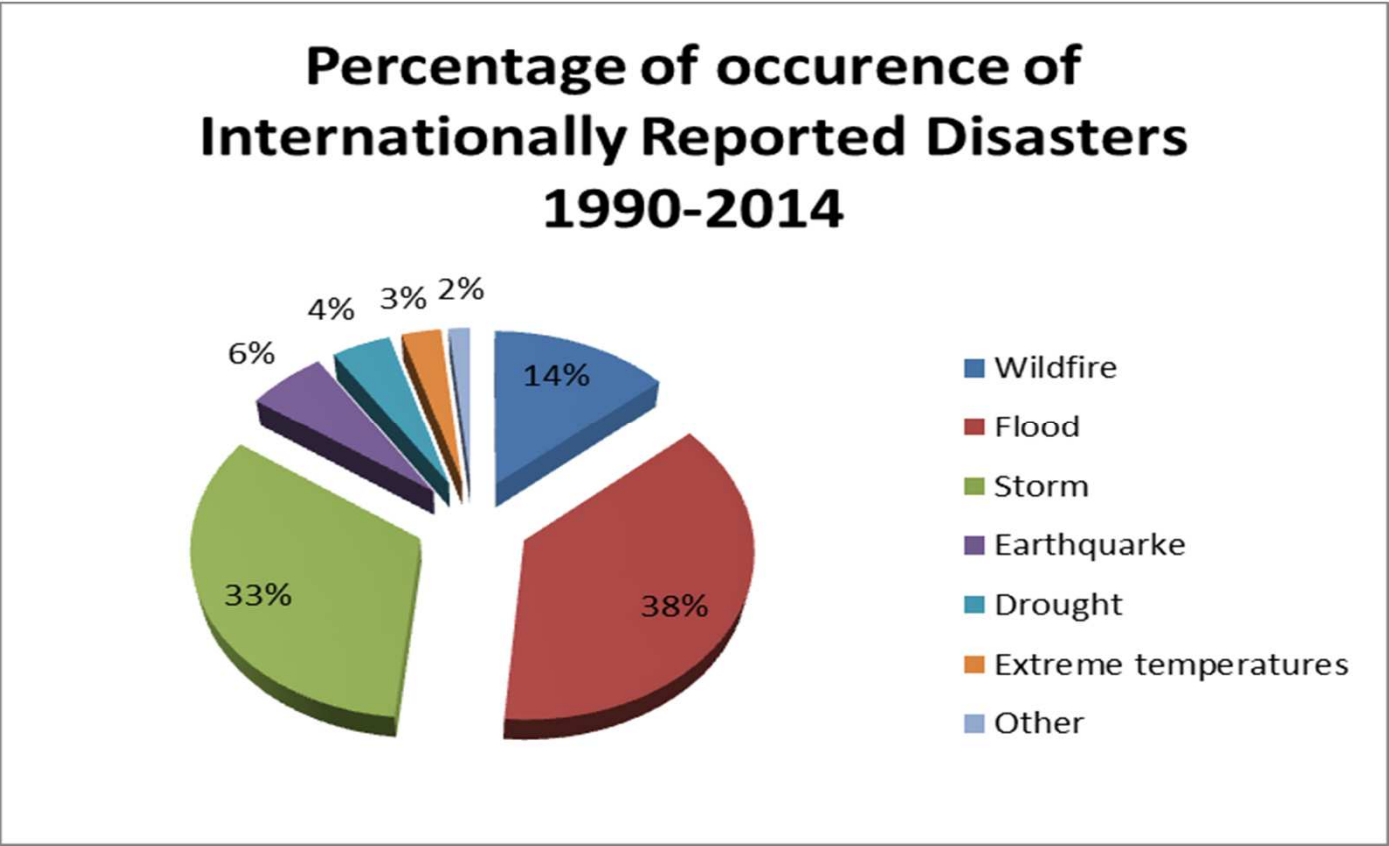
# Disasters/risks that could affect the Built Environment (Natural)



# Disasters/risks that could affect the Built Environment (man-made)



# Risk Profile for South Africa



## Recent disasters/risks in South Africa

Nature of Disaster	When	Where
Flood	2011	Country wide (townships)
Storm	2012	Mahikeng
Flood	2012	Durban
Heavy Storms	2012	Cape town
Flood	2012	Eastern Cape
Storm	2012	Mpumalanga
Earthquake	2013	Barbeton & Nelspruits
Flood	2013	Johannesburg
Wildfire	2013	Paarl
Heavy storm	2013	Sasolburg, Free state
Drought	2016	Countrywide
Heavy storm	2016	Johannesburg

<http://www.disaster-report.com>

# Barriers to resilient built environment

## Physical

- Climate change
- Construction on safe sites

## Social

- Poverty
- Rapid population growth
- Corruption
- construction on unsafe sites
- Growth of informal settlements

## Economic

- Poor funding at local and municipal levels
- Financial limitations in meeting regulations

## Technical

- Shortage of qualified personnel
- Failure to apply knowledge to practices



## Important regulations for Risk Reduction

- National building regulation and building standards Act of 1977
- National Water Act of 1998
- Disaster management guidelines for municipalities (National Disaster Management Centre)
- Health and Safety (SANS10400)
- South African National Building Regulations (NBR)
- National Environmental Management Act 107 of 1998(NEMA)
- National Environmental Air Quality Act (NEMAQA) of 2004

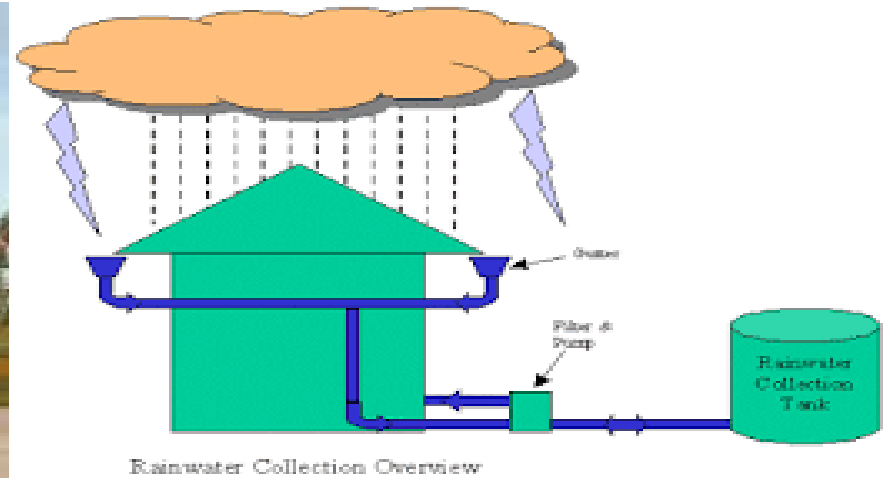
## Role of the Municipalities

- Building regulation has proven a remarkably powerful tool for increasing people's safety and resilience and limiting the risk that they face. This can be done at different stages
  - Planning of developments
  - Development of resilient standards
  - Implementation

# Supervise land use and prevent construction in unsafe locations



# Provide standards that are able to reduce foreseeable risks



## **Risk based implementation of regulations for permits and inspections**

- Consistency in plan reviews and inspections
- Focusing of resources on higher risk building projects
- Focus on builders with history of non-compliance
- Process simplification for lower risk construction in the local context
- Shift design risks & liability to the sectors with the skills, competencies and experience e.g. private firms

## **An enabling environment to foster resilience**

- Training of professionals in resilient practices
- Adequate remuneration of professionals e.g. to prevent corruption

# Who benefits from resilient risk reduction

People of SA especially those in the risk prone areas; low and middle income families



## Conclusion

- South Africa's risk profile as regards to resilient built environment management point to risk reduction as a result of floods, fire and more recently drought.
- Building regulation has proven to be the most effective tools for reducing disaster and chronic risk in the built environment
- Municipalities can ensure positive outcomes. For example, future construction and urban expansion would take place on safer sites e.g. sites not prone to flooding (NBRBSA).



# Thank you

