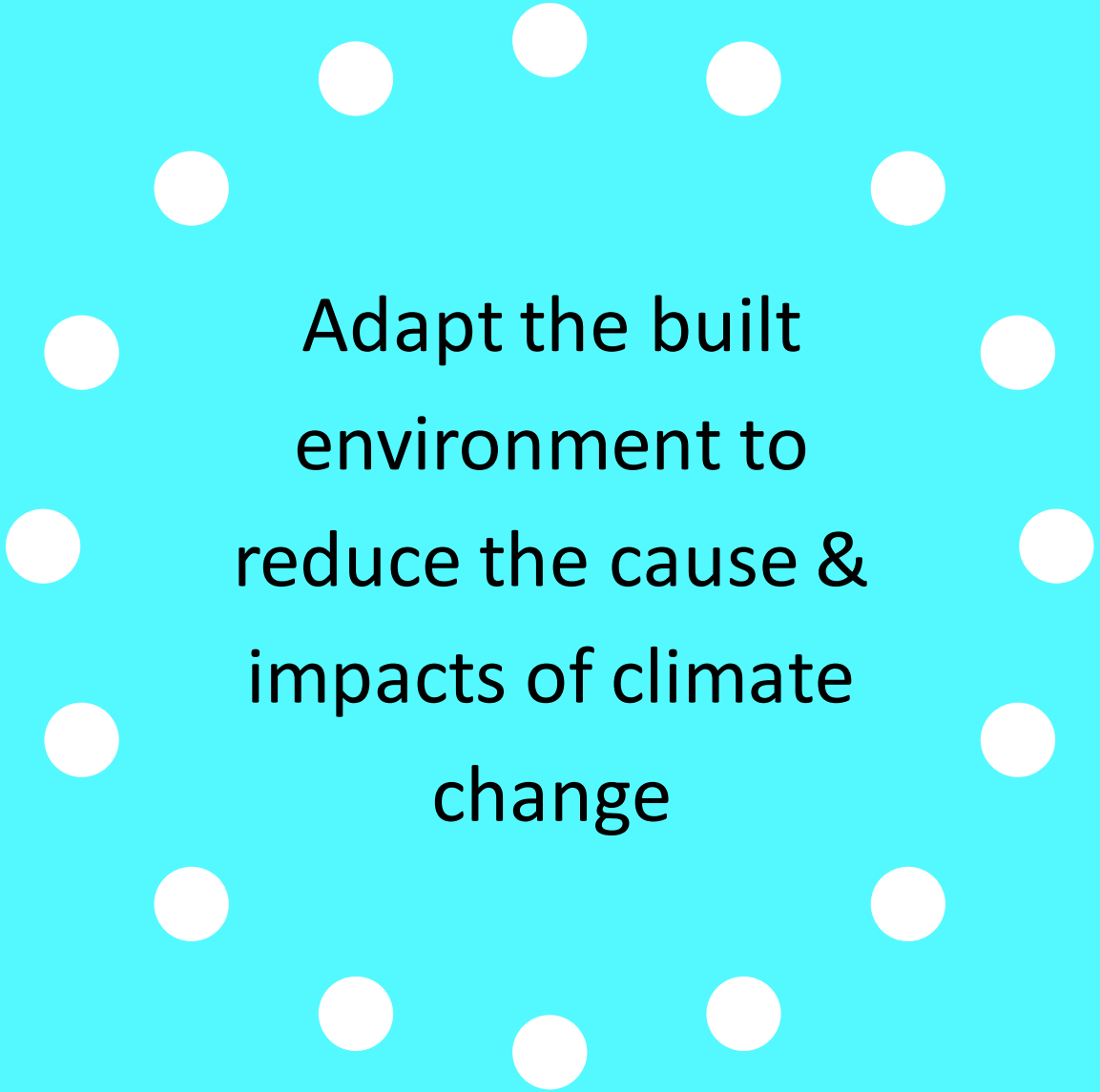




Resilient  
Building  
Council

# Adaptation

Building systems, impact & opportunity



Adapt the built  
environment to  
reduce the cause &  
impacts of climate  
change



# Expert Collaboration

**Dr Ian Bennetts**

Engineering, RBC

**Kylie Steel**

Risk Assessments, RBC

**Loretta Durango**

Community Engagement, RBC

**Stephen Kip**

Building Policy, RBC

**Craig Lapsley**

Community Resilience, RBC

**Vince Dowling**

Research Scientist, RBC

**Jeff Emmerton**

Digital projects, RBC

**Mark Steel**

Building practitioner, RBC

**Eldon Bottcher**

Risk assessment & architecture, RBC

**Matt Bailey**

Project Manager, RBC

**Dr David Henderson**

James Cook University Cyclone Testing Station

**Pat O'Driscoll**

James Cook University Cyclone Testing Station

**Prof. Tuan Ngo**

Infrastructure Engineering, University of Melbourne

**Dr James Davidson**

JDA Co Architects

**Katie Vines**

Director of Operations, Climate-Kic

**Karla Fox-Reynolds**

Built Environment Project Manager, Climate-Kic

**Dr Alan Green**

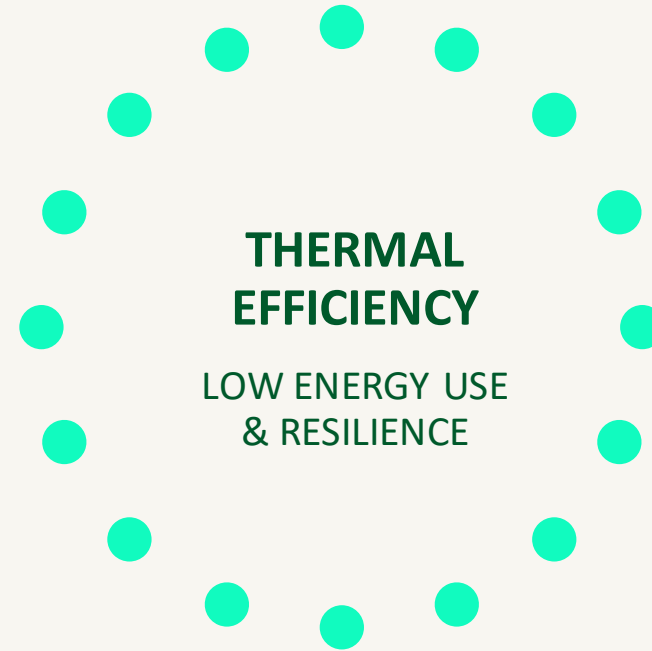
University of Wollongong Sustainable Buildings Research Centre

**Prof. Paul Cooper**

University of Wollongong Sustainable Buildings Research Centre

# Building Performance

- Extreme weather & disaster resilience
- Thermal efficiency – low energy use & resilience
- Self-sufficient – before, during & after disasters, energy, water, maintenance, operations
- Sustainable systems – life & health, homes, communities, insurance, finance, productivity, economies

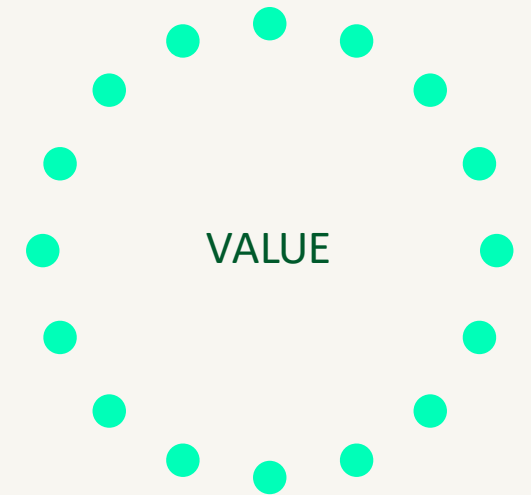
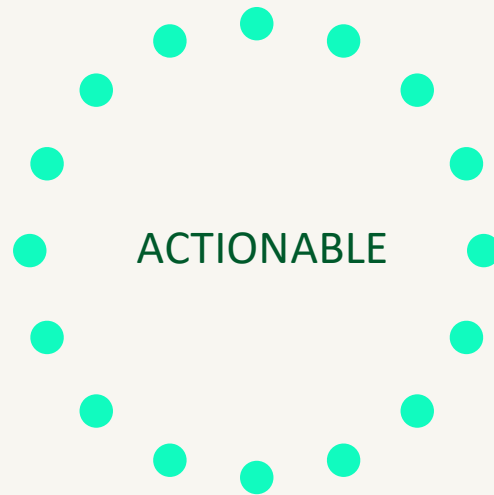
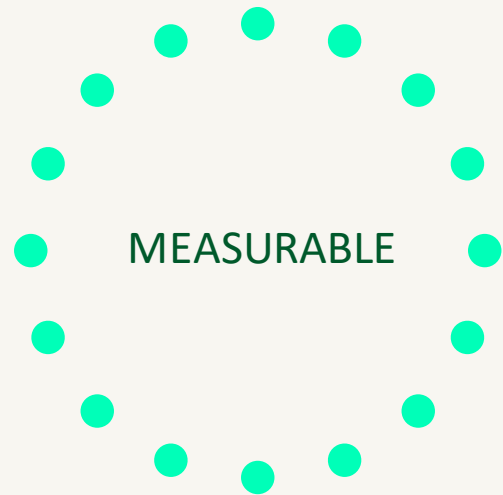


Measurable risk reduction creates value & opportunity, beyond avoided loss & damage.

# Market Mechanism

## Measure resilience to enable:

- Household action & investment
- Government incentives
- Insurance recognition & rewards
- Resilience finance
- Property value
- Investment decisions
- Materials & systems innovation
- Supply chain investment



# Resilience Ratings

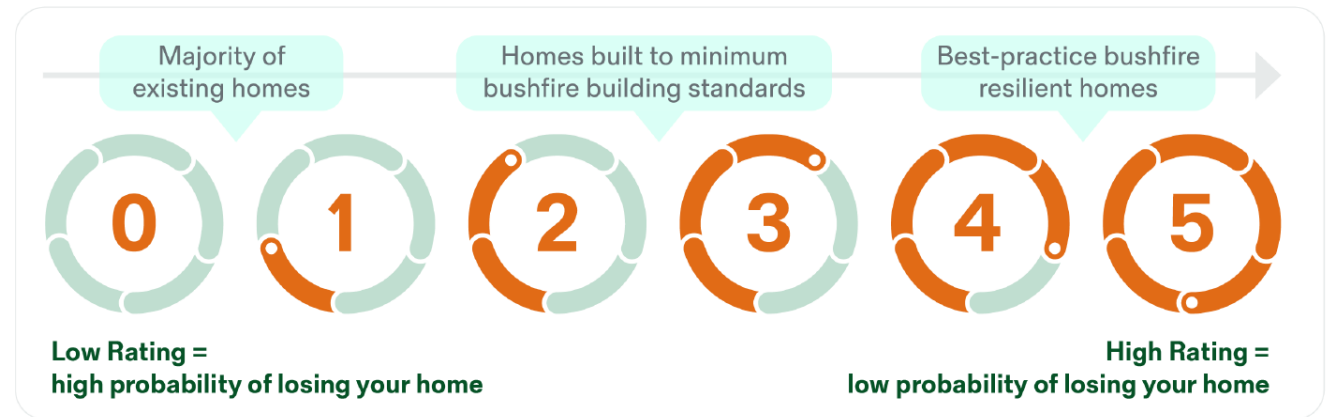
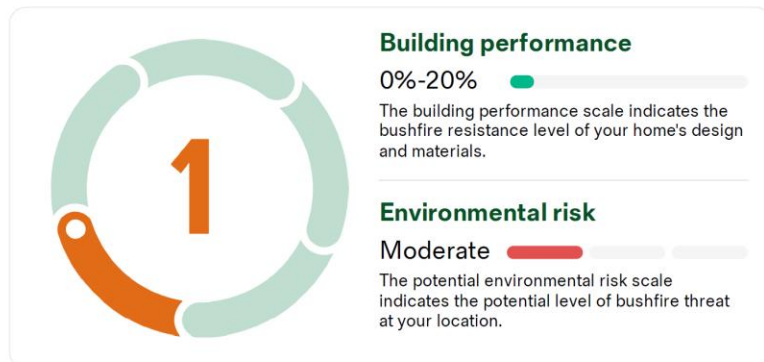
- Collaboration to unify scientific models
- Provide national measure & simple communication
- Identify multiplier effects & resolve conflicts
- Local risk & climate context
- Customised adaptation actions
- New or existing buildings
- Resilience relevant to all buildings, urban & regional



# Inform Investment

- Measure residual risk at asset, community, state & national levels
- Identifies actions to increase rating, inc. low-cost high-impact actions, multi-hazard benefits & thermal efficiency, energy efficiency
- Investment decisions: relocate, retrofit, re-build
- Consistent & transparent land-use planning metric
- Measure impact of community-wide mitigation actions for property resilience

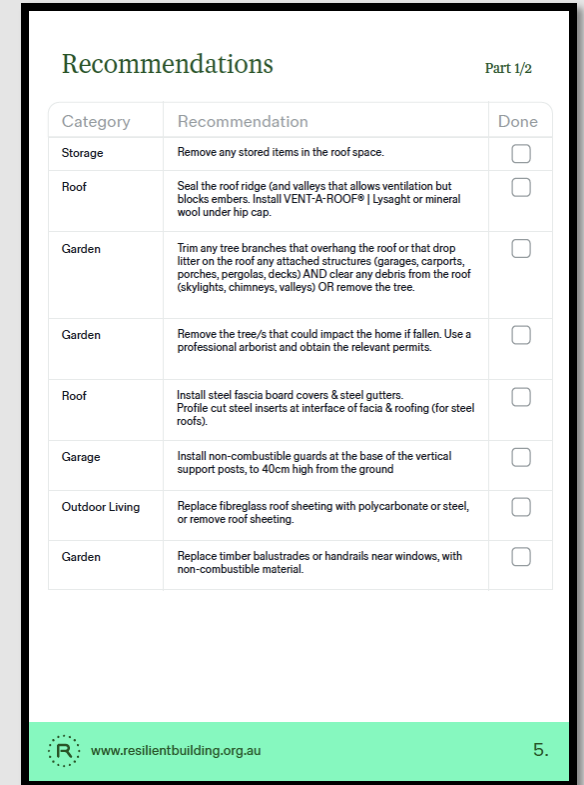
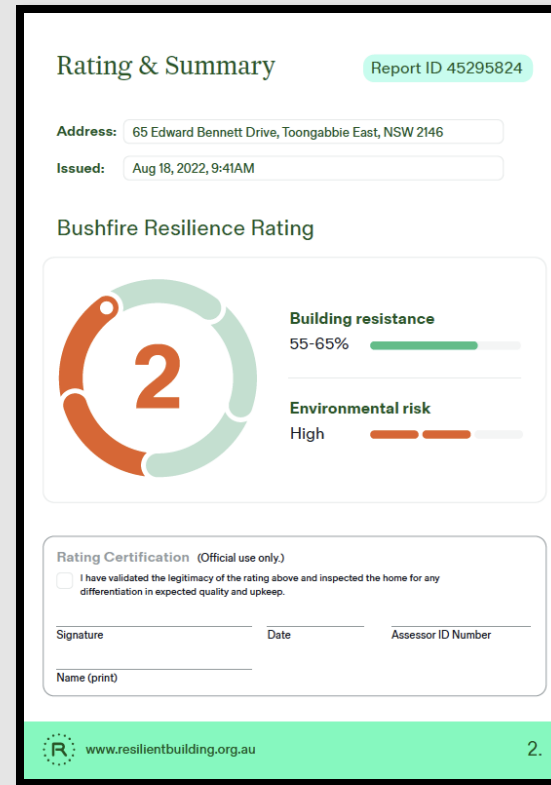
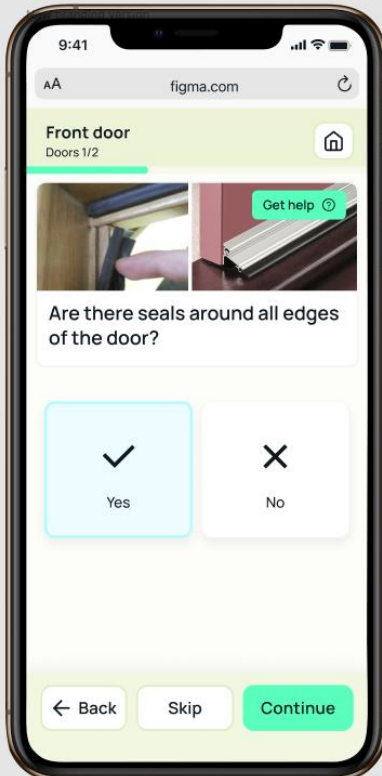
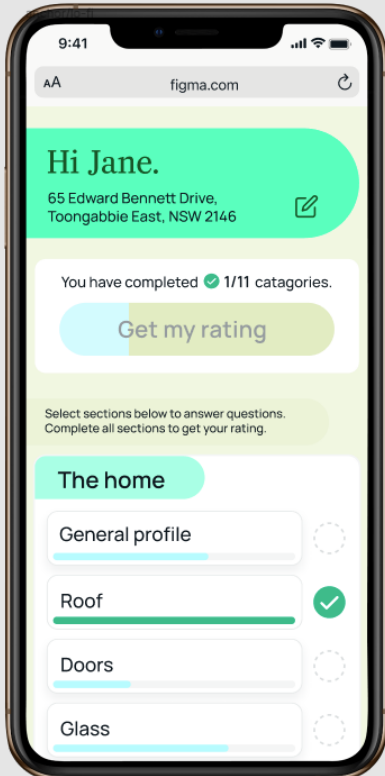
## Bushfire Resilience Rating





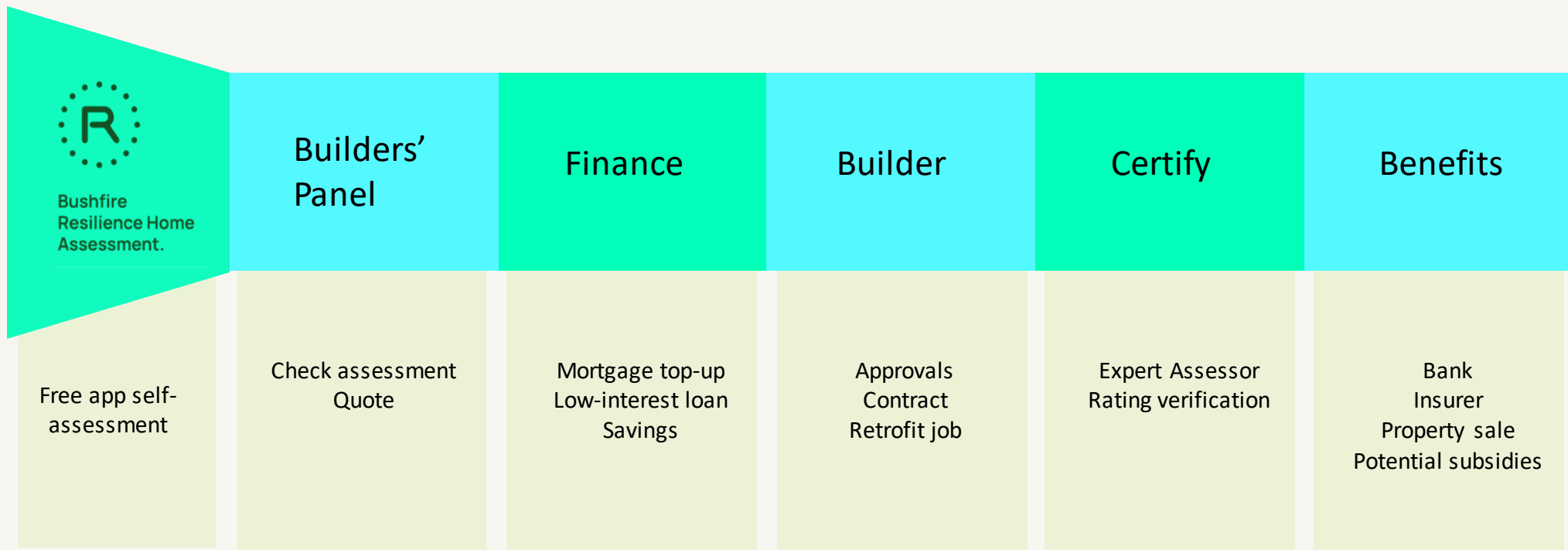
# Bushfire Resilience Ratings App

- Probability of building loss model 2014 - 2021
- Engineering first principles, building loss surveys & fire testing
- Federal government funded, launch March 2023
- Digital tool - free home self-assessment app
- Measure performance of buildings to local risk
- New & existing homes



# Retrofit Pilots

- Bushfire Resilience Ratings + National Scorecard
- World first – whole of mortgage Resilience Rating discount
- Supported by Resilience Investment Vehicle – public-private partnership, inc IAG, NAB, BlueScope, NEMA, CSIRO
- NSW & VIC retrofits & new builds
- Stimulates private investment in household disaster risk reduction
- Retrofit ecosystem testing to enable scale



# FORTIS

- Demonstrate highest Resilience Ratings new builds
- Bushfire, flood, storm, heatwave, condensation & mould, pests, thermal comfort, energy use, building waste, maintenance
- Principles can be applied to any design
- Prefabricated or on-site builds
- Partnerships to deliver FORTIS affordable & social housing for governments & investors
- Build better & faster, resilient, sustainable housing
- Community-led design, supported by Shoalhaven City Council & NRMA Insurance



# Systems Impact

Banking	Insurance	Households	Government
Reduced risk to assets, insurable assets	Ratings: recognised effective risk reduction action for customers	Identifies most effective & efficient actions	Ratings data informs state mitigation investment, policy
Securitize resilient mortgages in Resilience Bond, high demand	De-risking assets reduces claims costs, downward price pressure premiums	Cheaper finance, insurance & energy costs, improve property value	Retrofits creates new economic activity, reduces cost of recovery
Creates financial value, reduces portfolio risk	Sustainable insurance business, creates value	Reduced risk to life, health & home. Creates financial value	Economic growth, reduced risk to citizens & infrastructure

## 2M Retrofits

- 2M Australian homes at high to extreme disaster risk
- \$1.4T property value at risk
- 80B new retrofit construction market opportunity

## 1M New Homes

- Social & affordable housing program
- Build to high Resilience Rating levels
- Create value: insurance, cost of capital, property value, investor demand

## Resilience Bond

- Retrofit lending through public-private capital fund
- Cashflows generated in Pilot enable scale
- Apply existing sustainable finance frameworks

## Investment Data

- Resilience Ratings & RBC National Building Audit generate property data, national adaptation scope of works
- Leverage data to inform efficient & effective public & private investment

# What next?

Make resilience a policy priority

- Government stimulus: **retrofit incentives**, i.e grants for actions that raise Resilience Rating, target high risk areas, **resilient social & affordable housing**
- Creates new **resilience construction market**, sustainable economic growth, jobs & skills
- Scale for public & private resilience lending, inc. **Resilience Bonds**
- **Disclosure** of Resilience Ratings: drives demand in property market, informs land-use planning
- Resilient, **sustainable value chain** – manufacturing, construction, insurance, finance, skills & jobs
- Multi-hazard building systems & materials **testing facility**, support NSW innovation & export

