Glen Brumby
Director, Building Codes Queensland



# Building Codes Queensland - Governance

**Building Minister**

**Deputy Premier and Minister for Infrastructure and Planning**
Honourable Paul Lucas MP

**Director General**

Colin Jensen

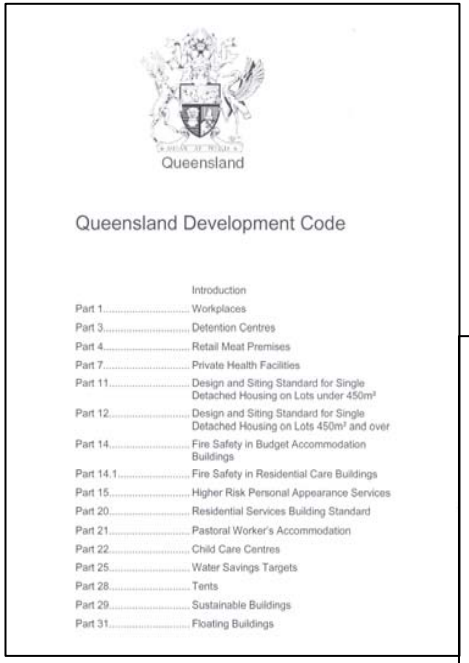
**Deputy Director General (DDG) – Planning Group**

Gary White

# Who are we?

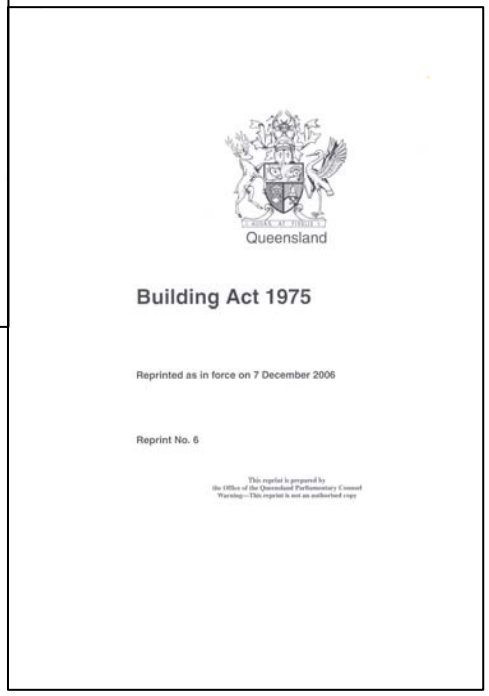
**BCQ** oversees –

- Building Act (& regs)
- Plumbing and Drainage Act
- Queensland Development Code
- Queensland Plumbing and Wastewater Code
- Building and Development Tribunals
- Plumbers and Drainers Board
- Queensland's ABCB and NPRF representation
- Building and Plumbing industry consultative groups


Queensland

Queensland Development Code

Introduction
Part 1 ..... Workplaces
Part 3 ..... Detention Centres
Part 4 ..... Retail Meat Premises
Part 7 ..... Private Health Facilities
Part 11 ..... Design and Siting Standard for Single Detached Housing on Lots under 450m²
Part 12 ..... Design and Siting Standard for Single Detached Housing on Lots 450m² and over
Part 14 ..... Fire Safety in Budget Accommodation Buildings
Part 14.1 ..... Fire Safety in Residential Care Buildings
Part 15 ..... Higher Risk Personal Appearance Services
Part 20 ..... Residential Services Building Standard
Part 21 ..... Pastoral Worker's Accommodation
Part 22 ..... Child Care Centres
Part 25 ..... Water Savings Targets
Part 28 ..... Tents
Part 29 ..... Sustainable Buildings
Part 31 ..... Floating Buildings


Queensland

Building Act 1975

Reprinted as in force on 7 December 2006

Reprint No. 6

# Climate change resilience in regulations

**Focusing on -**

- **A brief outline of the national context**
- **Queensland's experience in adapting to climate issues, particularly with respect to water savings, harvesting and other plumbing related work; and**
- **some practical issues facing regulators**
- **future directions**

# The plumbing and building revolution

- COAG Agenda – a National Construction Code - integrating plumbing and building the first priority
- Climate change issues and responses – drought and water management
- Climate change adaptation – energy use and generation, temperatures wind, bushfires, soils
- Maintenance and monitoring
- Eco-materials

# Integrating plumbing and building codes

Key points from QLD's point of view–

- Need to better resource and service plumbing regulators
- Regular plumbing code updates - Policy issues debated regularly and included in the code not standards
- Integrated standards and codes – remove inconsistencies and overlaps building and plumbing
- Some Ministerial oversight
- Strategic focus on sustainability, particularly water
- Clear approval processes and product certification
- Not a licensing forum

# Eco materials

Sustainability focus is shifting from just operational energy

- Eco friendly materials will include life cycle energy – there will eventually be a framework to assess and perhaps give credits for materials performance
- Eco friendly is also encompassing human and eco toxicity and other environmental impacts of production.
- Very hard to compare materials – there is a need for reliable inventory data

# Climate change – drought & flood

- Impact of severe drought and high impact floods in QLD
- QLD water revolution - water capture, storage, treatment and reuse, metering, demand management
- Long term approach – multi-faceted, all sectors targeted, decentralised capture complemented by recycled water pipeline back to the largest dam
- SEQ severe drought - floods in Mackay

# Climate change – water management

- Water savings targets – new houses and townhouses
- Alternative water sources – commercial
- Expanded use of treated greywater & large scale blackwater reuse trials
- Mandatory demand management measures – shower roses, taps, toilets
- Sub-meters for sole occupancy units and body corporate lots
- Recycled water pipeline, pressure reduction, sector specific programs, subsidised plumbers visits, etc

# Climate change – water management

Examples –

- Coomera-Pimpama – local dual reticulation to homes
- GCCC laundry – large scale grey-water reuse
- Carina aged care – rainwater/stormwater
- Industrial Park, Airport precinct - stormwater

Problems – pressure reduction

- new fire systems – approvals
- existing buildings compliance
- fire testing standards
- Fire services – double/single check valves

# Climate change adaptation – energy

- Energy efficient hot water systems – new homes
- Energy efficient hot water systems at replacement in new homes, in gas reticulated areas, from 1 January 2010 – a plumbing requirement
- Energy efficient lighting in new homes
- Thermal performance of homes – star ratings in the Building Code
- Section J of the Building Code

# Climate change adaptation – temperature

- Heatwaves in Europe – Paris 2003, USA Today (25/09/2003) – “The death toll in France from August's blistering heat wave has reached nearly 15,000, according to a government-commissioned report released Thursday, surpassing a prior tally by more than 3,000.”

- The thermal efficiency and design of homes will become more important — QLD considering 5 star and housing styles that suit the climate – covered outdoor living areas

# Climate change adaptation – wind, fire & soils

- There may be a need to rethink cyclone mapping and intensities - this can have an impact on building costs – also Storm surges, rain and hail events
- Queensland has vegetation and climatic conditions that make extreme “ash Wednesday” style bushfires unlikely - changing conditions may increase the likelihood of extreme bushfires
- Drought can affect soil behaviour. Soil movements can crack pipe-work and foundations. Higher costs? New standards?

# Maintenance and monitoring

- Upfront costs for new water and energy efficiency measures are significant. Performance is easily degraded in practice.
- Maintenance codes for sustainability not just essential safety systems? Grey-water plants, performance?
- A sustainability management plan as part of the approval process?
- Declarations, benchmarking and reporting on actual use will become part of our building landscape – metering?
- Examples – building management systems can be complex.

# Regulators' challenges - uncertain times

- Building codes mostly based on historical evidence – probabilities of events exceeding a historical norm. E.g. measure wind speeds over time in various locations.

- Set standards with a factor of safety for extreme events over a given timeframe. Setting **acceptable timeframes** and **safety factors** is a big policy issue.

- This is reactive and slow – not suited to uncertain times

# Regulators' challenges – rapid change

- We are asked to accelerate change after unusual and catastrophic events – E.g. the fire of London, historic droughts, cyclone Tracy
- We try and use science – E.g. we gather data and use theory to predict what might happen so we can prepare
- Shifting cost and benefits, and existing buildings

# Regulators' challenges – policy courage

- There will be  growing reliance on scientific analysis to cope in a timely way if we see a changing environment
- Science has no perfect answers - judgement is required
- It is hard to model regulatory impacts on future scenarios
- Rapid changes in building regulations quickly leaves existing buildings behind

# The future – lower ecological footprints & adaptation

- UK has already moved to mandate zero carbon homes (2016) – part of their energy policy
- California – quickly increasing energy efficiency (EE) performance of buildings - mandating 100% EE – lighting, EE – pool pumps and air-conditioners
- European Union – stringent energy reporting requirements for ongoing use of buildings
- Government policies will link more decisions to climate and energy impacts – QLD Climate Change Impact Statement
- Market for GREEN building standards is vibrant – industry leaders are looking for a green edge and keen to benchmark - Ratings tools for green materials are gathering steam

# More sustainable buildings

**Decentralised water & energy + demand management + lower eco footprint + adaptation**

## Building Codes Queensland

# Questions?