1 Buildings and Construction

Circular Economy Approach – Examine the Construction Value Chain

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LIFE CYCLE PERFORMANCE
- indoor environment quality
  - thermal comfort
  - air quality
  - lighting
  - acoustics
- adaptability
- service life
- feeling of safety
- accessibility
- maintainability

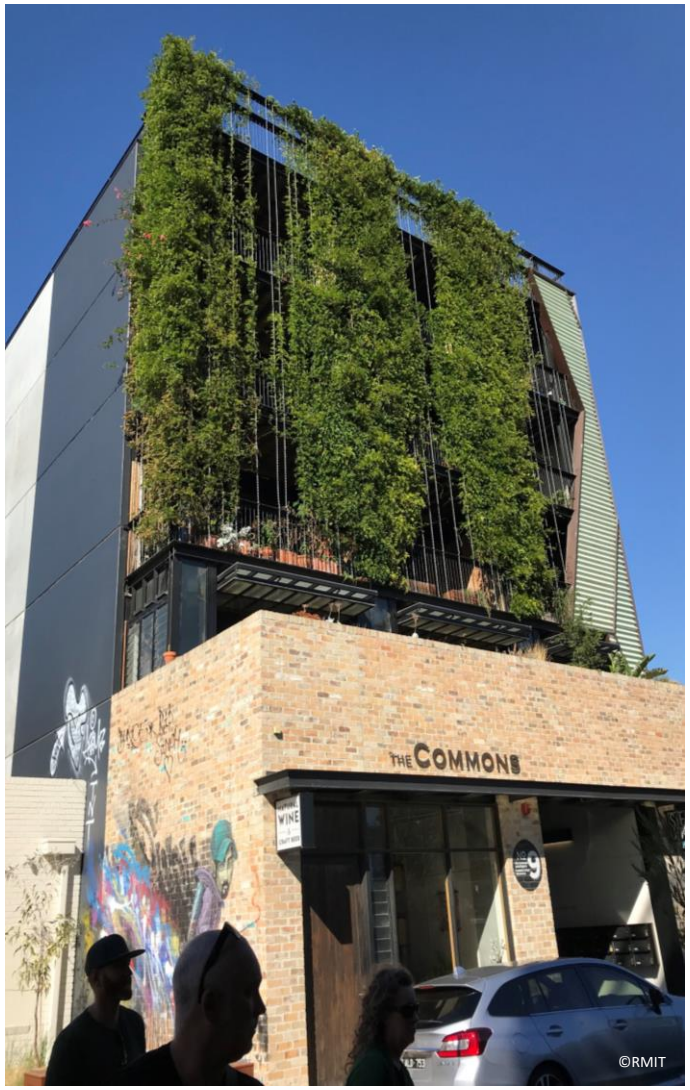
GENERAL
- meeting individual needs
- spatial relations
- aesthetics
- views

LIFE CYCLE ECONOMY
- capital cost
- running costs
- value increase (upside)
- total cost of ownership

LOCATION
- access to services

ENVIRONMENTAL IMPACTS
- carbon footprint / zero energy

CIRCULAR ECONOMY
- convert waste into resources
- adopt sustainable construction systems and materials



Why is this linear and not circular? We do not want to promote waste etc.!
This diagram should show how we can reduce inputs, increase recycling and reuse and reduce waste…

INPUTS	PRODUCTION	USE	POST-USE	OUTPUTS
land use	collaborative design	heating	re-use	GHG emissions
exploitation of virgin materials	manufacturing	cooling	recycle	waste
primary energy	construction	appliances	upcycle	impacts to biodiversity
water		maintenance	dismantle	social and cultural impacts
			end disposal	

2 Housing Asks 1/2

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The Asks

1. Aim at a resilient built environment using sustainably sourced materials and applying circular principles
2. Measure your water and energy consumption with the aim to be more efficient with use
3. Shift towards energy efficient appliances and water efficient systems
4. Go for a renewable energy contract when possible
5. Separate waste, compost and eliminate plastics where possible
6. Use the life cycle assessment approach
7. When designing, think about location and orientation when relevant, energy and space efficiency, passive solutions, local renewable energy production, long service life, adaptability, life cycle performance, usability and maintainability
8. When refurbishing, follow sustainable construction and circularity principles as described earlier
9. Monitor, measure and improve continuously.


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2 Housing Asks 2/2

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The Asks

1. Choose to live where you and your family can walk to most facilities such as work, school and the shops
2. Make an effort to support neighbourhood and government initiatives to improve your neighbourhood through recycling, environmental improvement etc schemes
3. Do not have a car and instead walk and cycle - if a car is needed, hire this for the short term
4. Live in an apartment or area of high density with local facilities readily accessible, avoid large free-standing buildings in areas without public transport
5. Buy fresh locally grown food, particularly vegetables and fruit
6. Avoid packaging and waste but when you have this, clean and sort this and bring it to local recycling spots
7. Have energy efficient equipment and switch this off when you are not using this
8. Do not buy unnecessary goods that will clutter your house and will have to be disposed of.

3 Housing Ask Framework

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Pre-Construction

- Design parameters as per applicable building codes /standards/guidelines:
  - Location
  - Amenities
  - Accessibility
  - Maximum incorporation of passive strategies
  - Orientation
  - Window Wall Ratio
  - Energy Efficient Technologies
- Water Efficient Fittings/systems
  - Solid waste segregation & treatment strategies
  - Sustainable building material & Construction technologies
- Improved Thermal & Visual comfort
- Improved Air Quality

During Construction

- Optimum utilization of natural resources viz materials
- Wise resource consumption (energy & water)
- Eliminate wastage, wherever possible
- Ensure material circularity by following 3R Principles
- Labour awareness to ensure habitual shift in resource optimization

Post-Construction

- Monitor resource consumption (energy & water) and waste generation
- Measurement and quantification
- Improve d resource optimization plan by exploring best possible interventions, if needed