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Flowerdale Community Expo Bushfire protection

Climate Adaptation National Research Flagship

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National Research
FLAGSHIPS
Climate Adaptation



Background to CSIRO Research

Post bushfire surveys

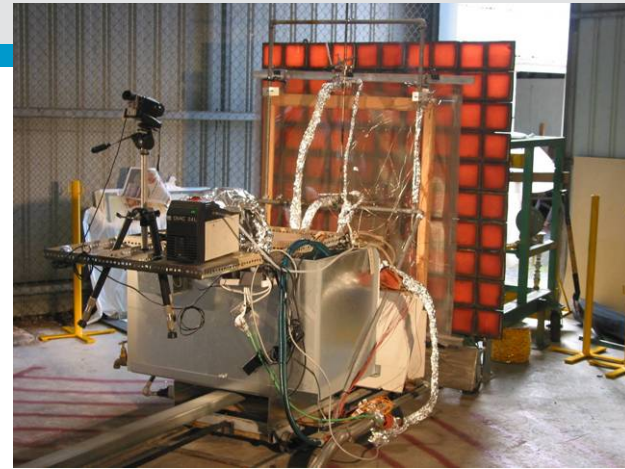
- 120 house lost per year in average (1939-2008)



Background to CSIRO Research Experimental work



Performance of fences



glazing system

house to house fire spread



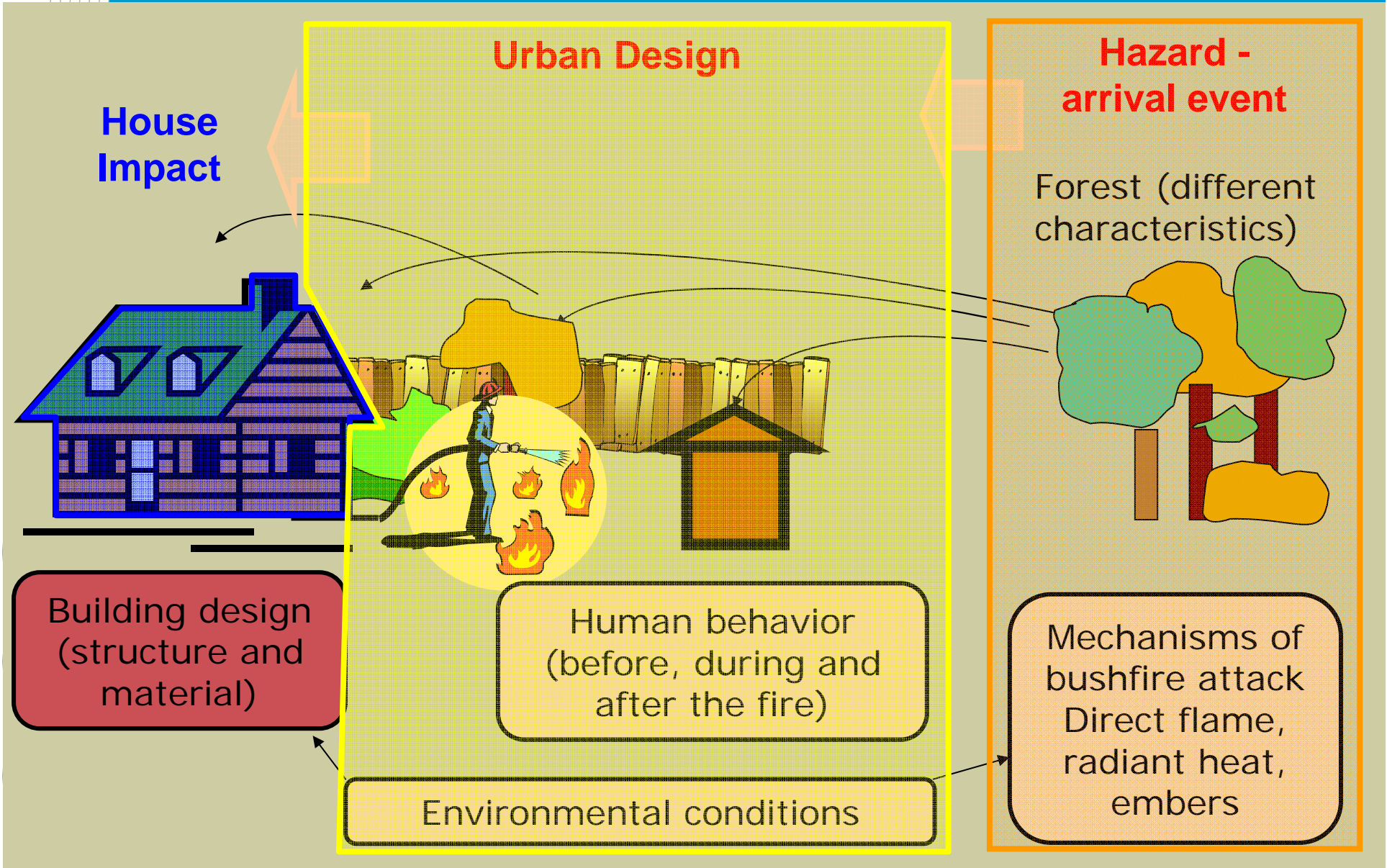
water tank



Timber deck



Building scale issues – Understanding the risk



Combination of strategies – Planning and landscaping

- **risk assessment, effective house siting, defining defensible space, vegetation management, access, and water supply.**
- For guidelines please see the following information on the CFA website:
http://www.cfa.vic.gov.au/documents/wmo_applicants_kit.pdf

Other measures include:

- use of strategic radiant heat barriers
- managing the distance or exposure to other structures
- managing non-vegetative combustible elements around the home e.g. vehicles, stored materials, combustible fencing...
- considering local climate and fire weather potential

Combination of strategies – Building

- Reduce the **vulnerability** of the house to **ember attack, radiant heat, flame** - AS3959-2009 Building in bushfire prone area. <http://www.standards.org.au/>
- Guide to building in Victoria after bushfires

In addition:

- Consider the risk presented by managed vegetation and other non vegetative combustible elements around the structure
- Consider the risk posed by **wind**
- We recommend the exploration of broader range of building options and increased risk mitigation effort in many areas of building design. The Building Code of Australia provides both minimum prescriptive requirement as described (in AS3959-2009) as well as a process of performance based building alternatives

Combination of strategies - Community

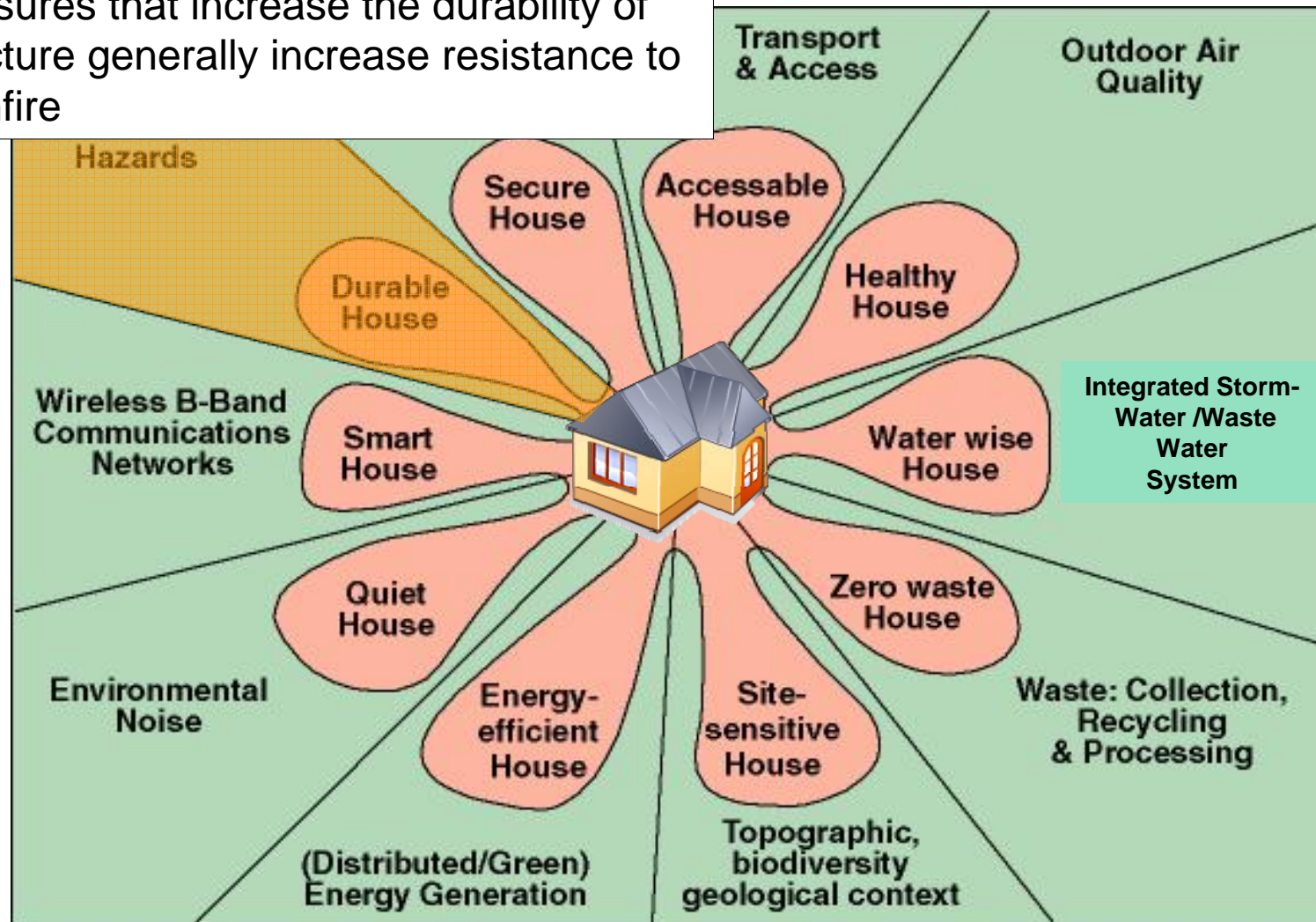
- Having a good understanding of the risk in your area
- Finding the right balance between life style and risk prevention
- Developing short and long term plans to protect your family from bushfire threat
- Maintenance and ongoing risk assessment of your property
- Participating in local bushfire knowledge network

Township Scale Issues

- Access
- Structure to structure spread mitigation
- Perimeter road
- Risk mitigation (radiant heat barrier,...)

Several consideration Synergies - Durability

Measures that increase the durability of structure generally increase resistance to bushfire



Synergies - Energy efficiency

House tightness (to a certain extent)

- Reduce gap in the envelop
- Seal doors and windows

Increase energy efficiency and reduce attack by ember and reduce smoke in the house

Roof protection

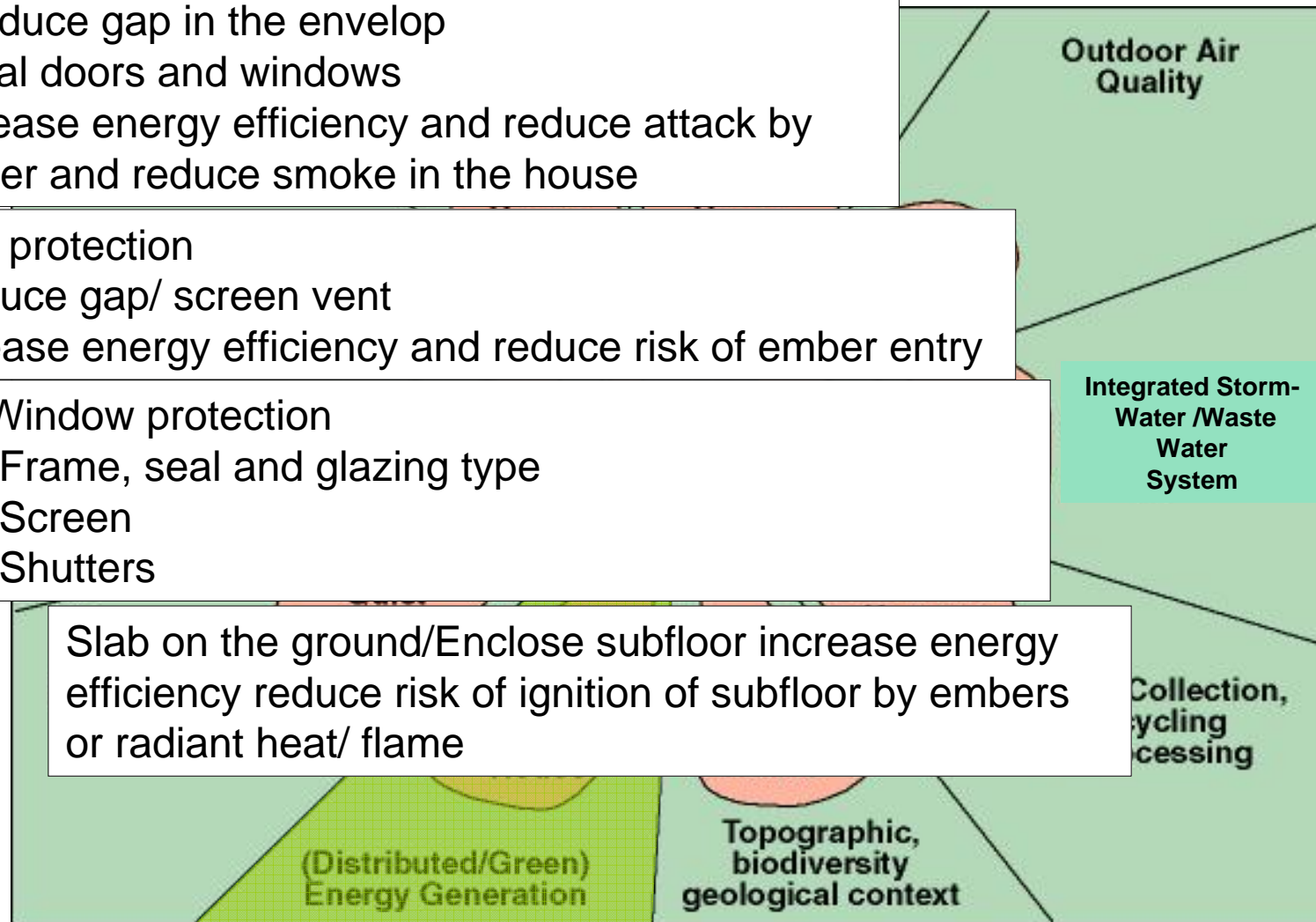
- Reduce gap/ screen vent

Increase energy efficiency and reduce risk of ember entry

Window protection

- Frame, seal and glazing type
- Screen
- Shutters

Slab on the ground/Enclose subfloor increase energy efficiency reduce risk of ignition of subfloor by embers or radiant heat/ flame

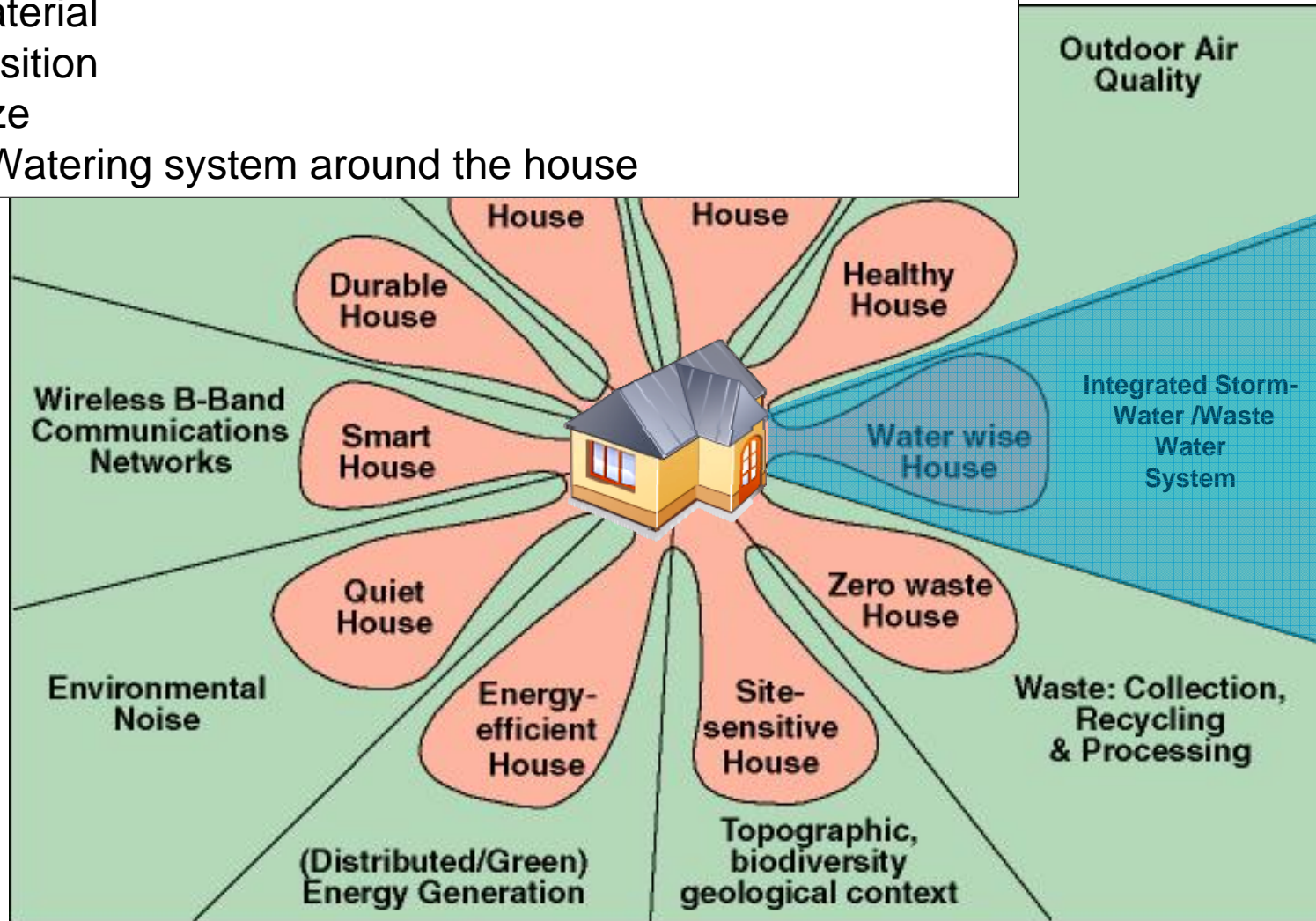


Synergies – Integrated water

Water tank

- Material
- Position
- Size

Watering system around the house



Conclusion

- Considering wide range of option
- Bushfire one of a wide range of consideration
- Bushfire measures should be part of the entire design and process
- Each measure should be considered as for effectiveness for a range of domain
- Bushfire mitigation measures are most cost effective when considered at every stage of the planning and design process

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Thank you

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