A voluntary forum of remediation industry participants

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Topics in this talk:

- Status of SuRF ANZ
- Sustainable Remediation (SR) in Australia and New Zealand
- ANZ special topics:
  - A perspective on SR and GSR
  - SR benefits in developing countries

Status of SuRF ANZ

Regulatory regimes in ANZ:

<u>Australia:</u>

Commonwealth

State Govt- regulator

Local Govt

<u>New Zealand:</u>

National Govt- regulator

Local Govt

The objectives of SuRF ANZ:

- Establishing SuRF ANZ policy in consultation with members;
- Providing website-based SR tools;
- Organising meetings and forums for SR dialogues;
- Facilitating contact with international SR associations; and
- Contributing to development of the National Remediation Framework.

Working Groups have prepared draft position papers for ANZ on:

- Planning aspects of Sustainable Remediation;
- Sustainable Remediation (SR) Metrics;
- SR Case Examples; and
- SR conferencing opportunities.

SR in Australia and New Zealand

Australian *National Strategy for Ecologically Sustainable Development* 1992.

Core Objectives of the strategy are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- To provide for equity within and between generations; and
- To protect biological diversity and maintain essential ecological processes and life-support systems.

Australian States (which hold the environmental legal powers) have enacted distinct legislation with the objective of promoting these principles of ESD and of ensuring that contaminated land and groundwater is managed with regard to them.

The New Zealand Environment Act 1986 states as an objective assurance that, in the management of natural and physical resources, full and balanced account is taken of:

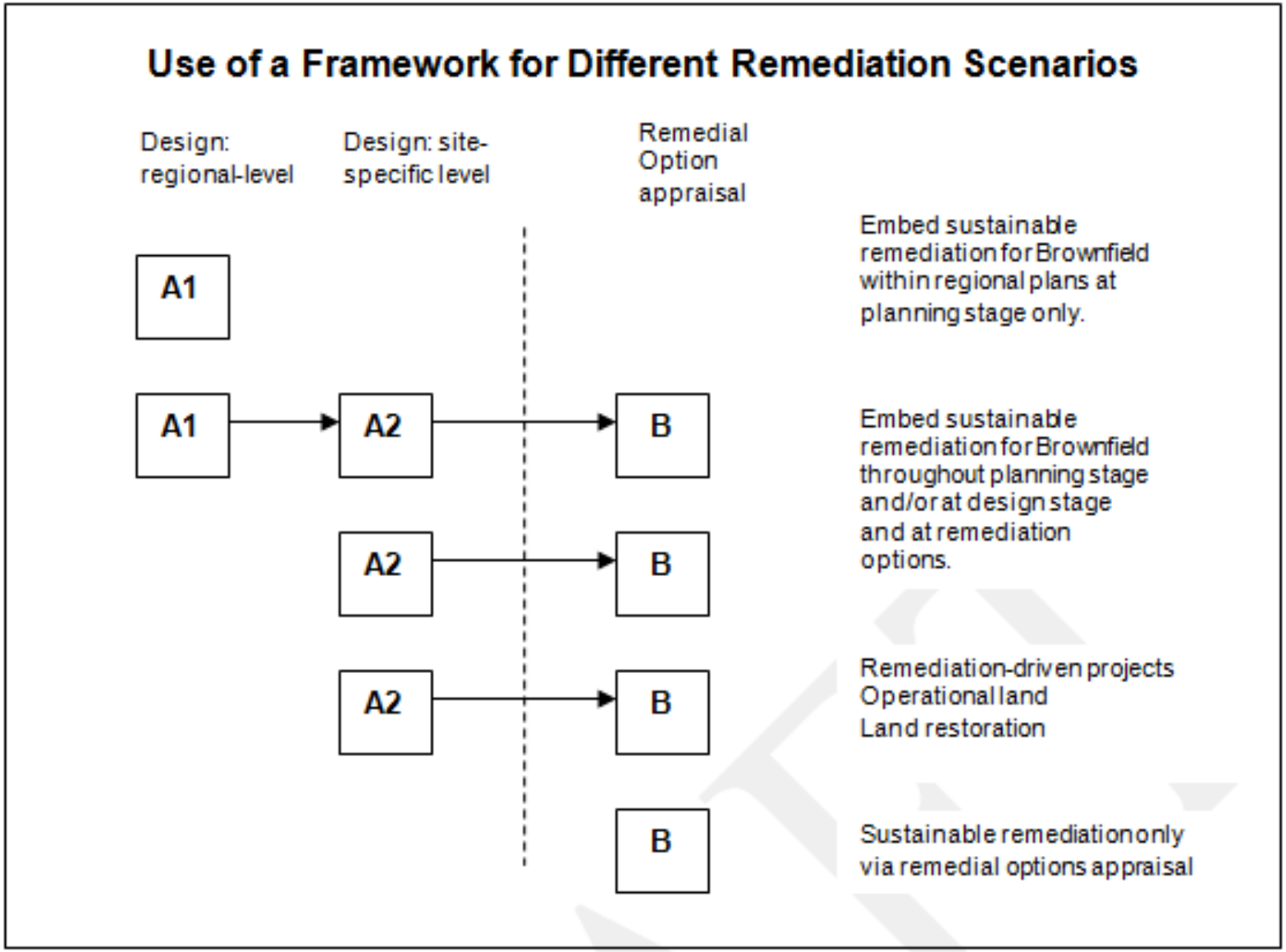
- the intrinsic values of ecosystems; and
- all values which are placed by individuals and groups on the quality of the environment; and
- the principles of the Treaty of Waitangi; and
- the sustainability of natural and physical resources; and the needs of future generations.

SR-based site contamination assessment and remediation consistent with Australian and New Zealand environmental regulations promotes:

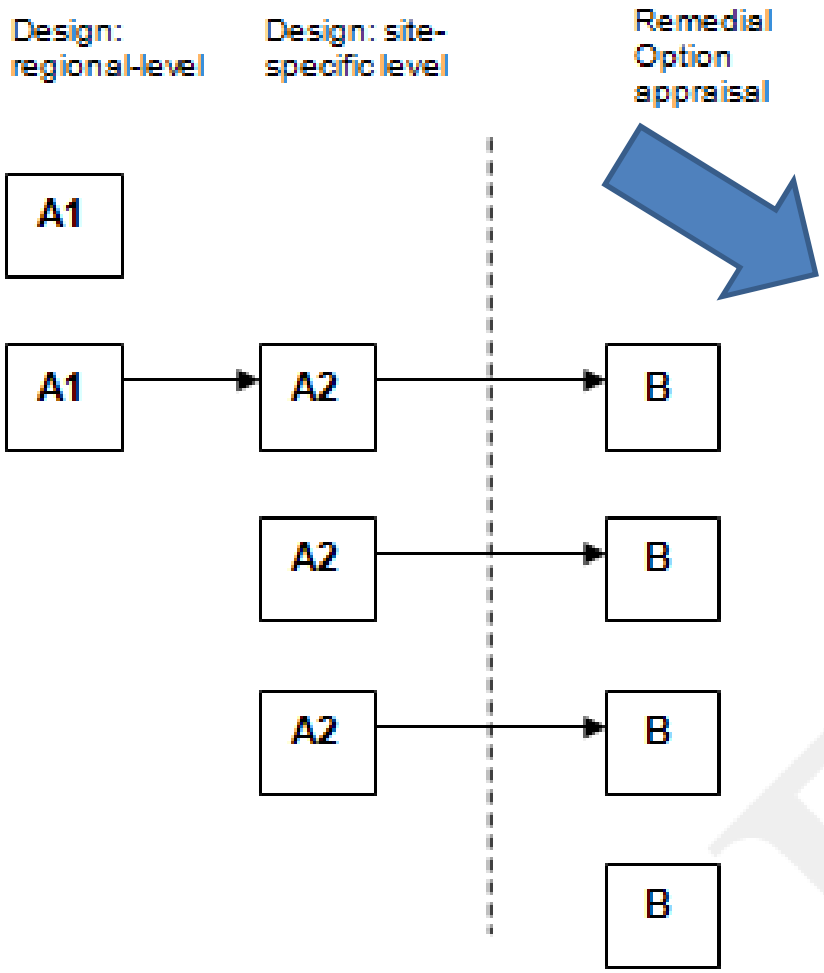
- A goal whereby site contamination remediation removes the threat of harm to human health and/or the environment as part of a sustainable (socially and environmentally acceptable and cost-effective) outcome; and

- Assessment and remediation objectives which are consistent with the Sustainability Indicators originally identified by SuRF UK and included in the SuRF ANZ 2011 draft Framework (found at www.surfanz.com.au).

SuRF ANZ draft Framework for SR:



Use of a Framework for Different Remediation Scenarios



Embed sustainable remediation for Brownfield within regional plans at planning stage only.

Embed sustainable remediation for Brownfield throughout planning stage and/or at design stage and at remediation options.

Remediation-driven projects
Operational land
Land restoration

Sustainable remediation only via remedial options appraisal

Sister sites: ‘Allied feeds’ and ‘Lednez’, Sydney, Australia:

- Contaminated fill dioxins in fish
- ‘State/private’ cleanup
- Private development
- Differential residual endpoints

SR case example Template

Project name	
Project location	
Client and/or client type	
Project description	
Project objectives/ key drivers	
Sustainable remediation aspects incorporated (delete aspects that are not applicable and include explanation/description of incorporated aspects	Environmental - Impacts on air - Impacts on surface and groundwater - Impacts on soil health - Impacts on ecology - Intrusiveness and aesthetics - Resource use and waste
	Economic - Direct costs and economic benefits - Indirect costs and economic benefits - Gearing - Employment/human capital - Lifespan and project risks - Flexibility
	Social - Community involvement and satisfaction - Human health - Ethical and equality considerations - Impacts on neighbourhoods and regions - Fit with planning and policy strategies and initiatives - Uncertainty, evidence and verification
Responsible working group member	
Photos available and provided	
Suitable for multi media presentation	
Suitable for detailed project review	

SuRF ANZ special topic 1- a perspective on SR and GSR

As SuRF ANZ understands it:

- GSR may be simply put as mandated risk-based endpoints for determination of remediation plans;

- SR may be put as remediation plans which balance environmental, social and economic endpoints.

Brownfields-based remediation as practised in Western countries promises considerable environmental, social and economic benefit through urban renewal.

Western Evolution of Brownfields:

- Brownfields : Abandoned idle or underutilized properties, where past actions have caused environmental contamination, with an active potential for redevelopment.

- Evolution of brownfields development in USA and developed nations

Remediation.....Health Protection

Urban renewal.....Co-location

Climate Change .....Carbon Mitigation

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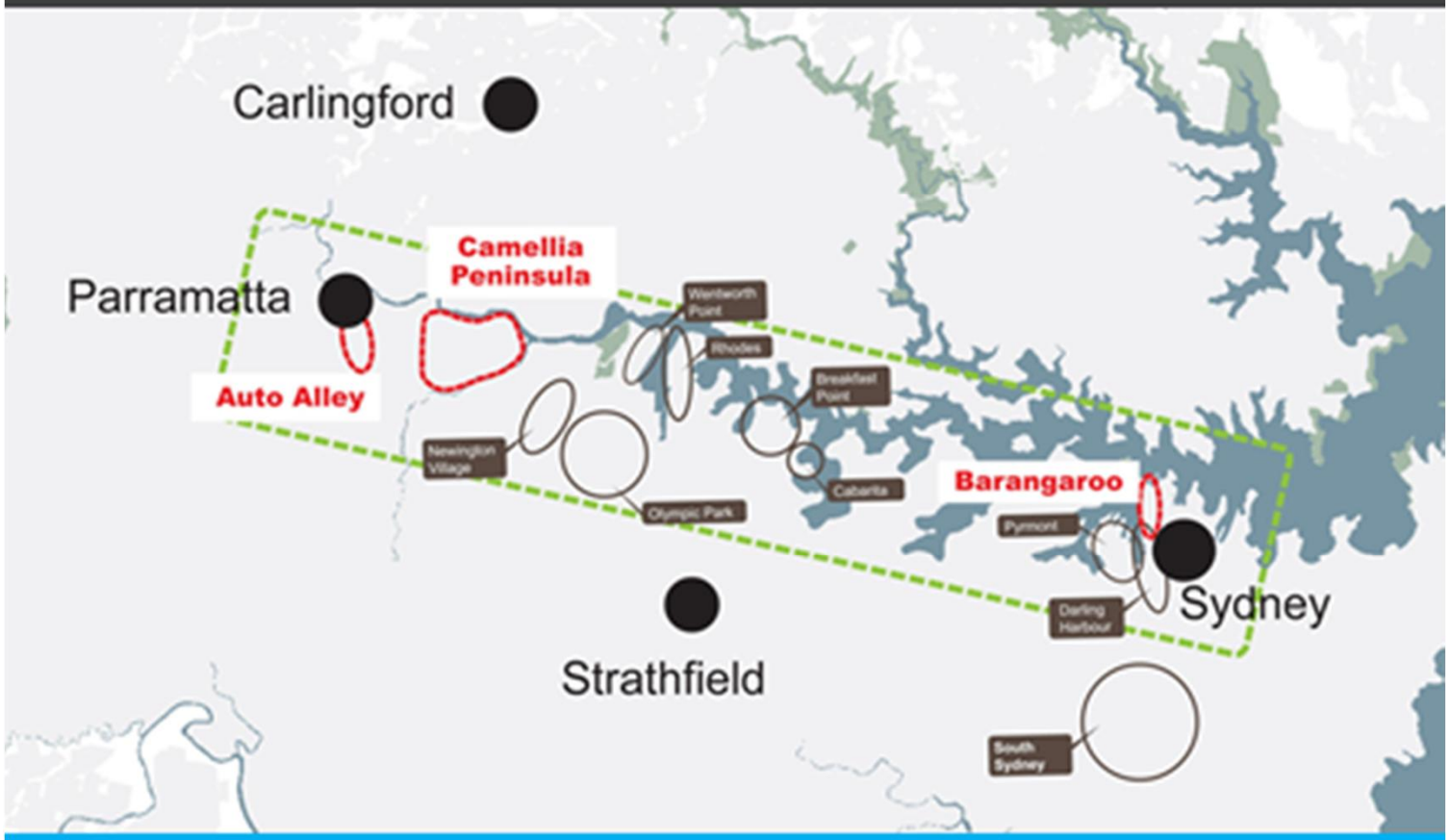
AECOM

‘Co-location’: **an urban ‘revitalization strategy that links the redevelopment of brownfields with nearby or adjacent properties that—like brownfields—can be a challenge to redevelop (**International City/County Management Association)

Major Brownfield Redevelopment Precincts –

Sydney and Parramatta CBDs



Sydney's Camellia Peninsula

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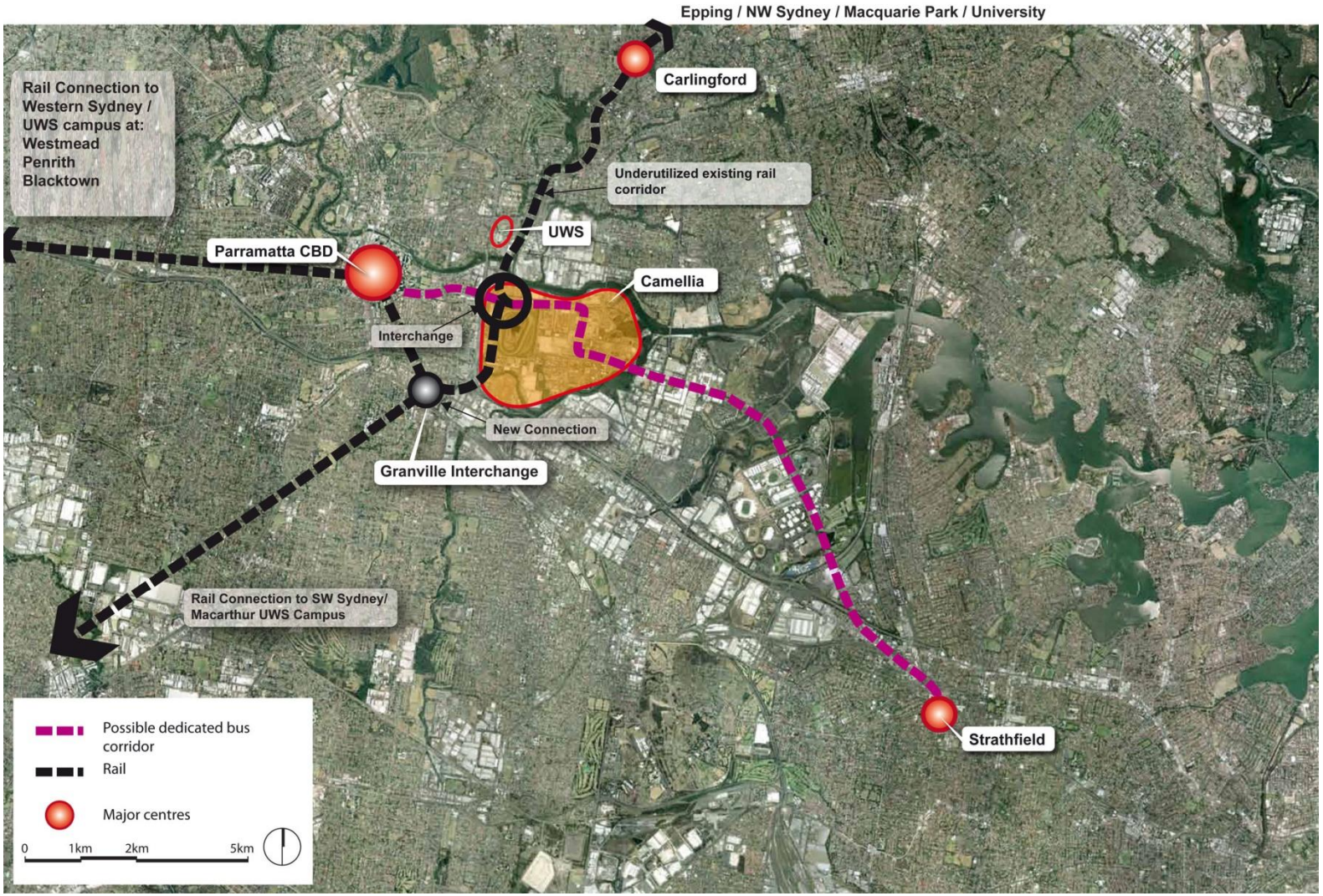
Possible Dedicated Transit Corridors



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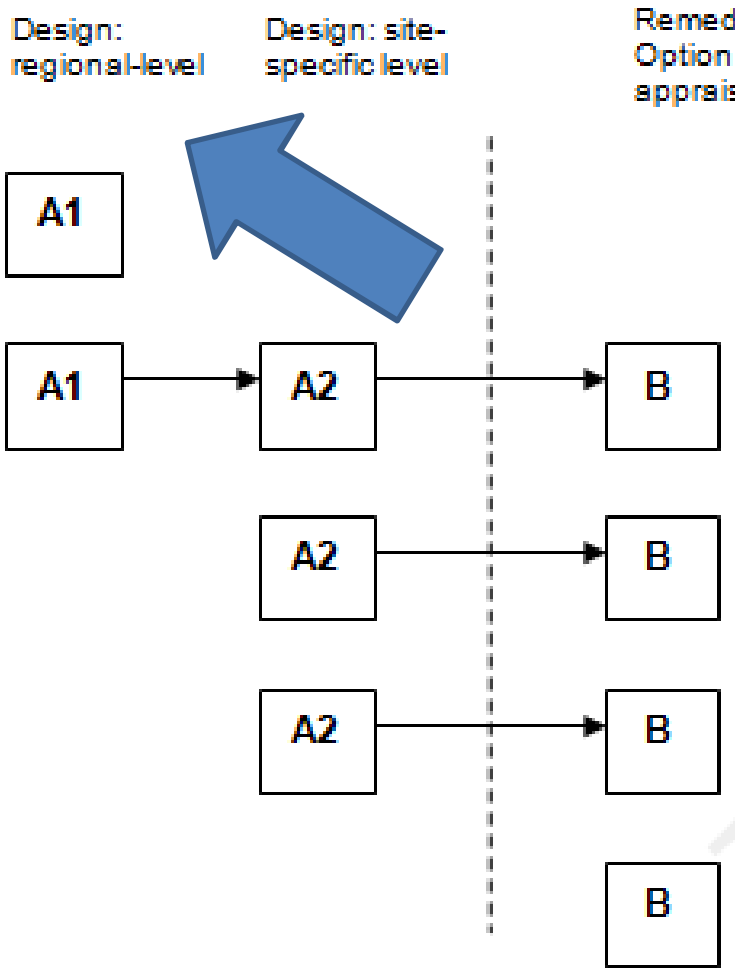

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Sustainable remediation only via remedial options appraisal

- The urban renewal attributes , and the ESD components, of SR will ultimately resonate with public stakeholders and regulators in ANZ

- Remediation outputs can expect to be publicly endorsed if they include social and economic endpoints as well as the important environment endpoints

- Best offered in an SR (while including the more singular GSR) framework.

Are Sustainable remediation and Risk management inherently conflicting?

No: they are related and overlapping

- Each brings important distinct considerations to remediation planning and practice
- A key consideration however is which takes precedence and priority.

Tiered ANZ regulatory-based remediation requirements are:

1. protection of human health and the environment (i.e. comply with regulatory requirements);
2. ensuring that risk to stakeholders is acceptable – i.e. risk is managed); and
3. achieving sustainability (i.e. sustainability is managed).

Emissions (lbs CO_2e	Brownfield site: Summerset (phase 1)	Greenfield site: Cranberry Heights
Site construction phase	24×10^6	4×10^6
Housing construction	80×10^6	110×10^6
50 yrs Utility consumption	470×10^6	940×10^6
50 yrs vehicle Usage	170×10^6	490×10^6
Total	750×10^6	$1{,}600 \times 10^6$

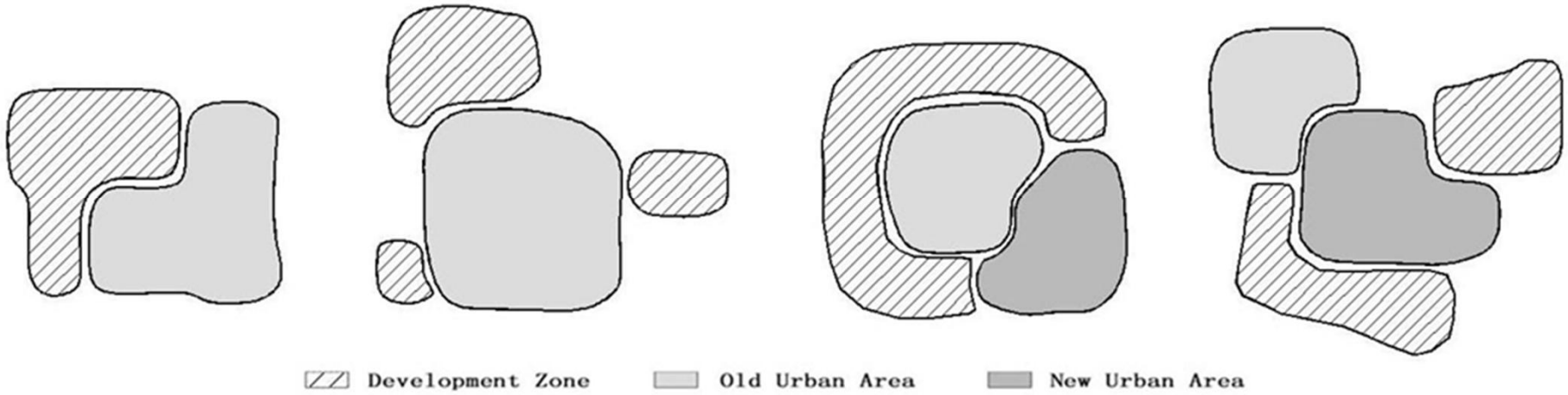
Source: Auld 2010

SuRF ANZ topic 2: SR benefits in developing countries

External Sprawl, Kathmandu Valley, Nepal

Source: Subba and Bjonness, ISoCaRP Congress 2008

China: unsustainable development zones?
Government urban land development partitions uses – negative carbon emissions mitigation implications.



Source: Zhang and Hu (2008) ISOCARP 44th International Planning Congress, Dalian, China.

Large slums in growing African cities exhibit petrol, municipal waste and sewage waste infiltration to soil and groundwater.

Kibera slum, central Nairobi, Kenya

Might the Kibera slum qualify as a carbon credit-generating brownfield site?

Conclusions:

- SuRF ANZ is establishing policy in consultation with members, providing website-based SR tools, and engaging regulators and the industry re SR;
- Key policy development areas are the planning aspects of SR, SR metrics, practical ANZ case examples and conferencing
- The SuRF ANZ SR framework looks outward to urban development and inward to site and remediation design
- GSR endpoints remain fundamental to remediation however the urban renewal attributes of SR ultimately will resonate with public stakeholders and with environmental regulators in ANZ
- Brownfield remediation contributions to sustainable urban renewal and development in developing countries may contribute to climate change mitigation and to social and economic development

Thankyou:

- SuRF
- AECOM
- SuRF 21 participants
- the Australasian Land and Groundwater Association

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GSR and SR may be considered complementary rather than conflicting.

- The issue is really ‘what is mandatory’.

- If regulations make reaching a particular endpoint mandatory, then the effort would be directed to achieving a sustainable and balanced approach to the achievement of that endpoint. This is effectively GSR.

- If the jurisdiction does not fix the endpoint (e.g. MNA or containment may be acceptable options - as long as the risk level of each is considered acceptable) then effort would be directed to which option provides the most sustainable solution. This is SR.

- In application of SR to a specific site a variety of criteria-based endpoints may emerge as appropriate to site use and to sustainability outcomes while protective of human health and the environment.