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Putting people first

Promoting sustainable transport and active living through improved residential flat building design.

BIKE|SYDNEY 



<http://cyclostyle.com.au/6222/nice-bike-rack/>



<http://www.flickr.com/photos/theory26/>

This document is BIKESydney's response to the NSW Department of Planning and Infrastructure's review of the State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development and the Residential Flat Design Code.

BIKESydney is an incorporated not-for-profit community organisation that advocates on behalf of people who ride bicycles living and working in and around the City of Sydney local government area. We are affiliated with Bicycle NSW.

We seek to develop a city:

- in which riding a bicycle is part of everyday life
- that is vibrant, healthy, productive, creative and robust
- that values community, mobility, health, wellbeing, social equity and sustainability, and
- where people of all ages can make easy choices to ride a bicycle, walk and take public transport.

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Executive Summary

There is compelling evidence which suggests that an increase in active transport can deliver significant cost savings to government, reduce traffic congestion, improve the health of the population, and contribute to a greater sense of community cohesion and well-being.

A growing number of State and Federal planning guidelines reinforce the need for integrated transport and land use planning, including measures to promote sustainable transport and active living.

The primary community opposition to new developments relates to traffic impacts. It is in the interest of developers and consent authorities to minimise car use by potential residents to improve the acceptability of new developments.

To reduce car use and encourage active transport the SEPP 65 Design Principles and Residential Flat Building Design Code should explicitly include references to active transport.

The SEPP should include minimum rates for bicycle parking/storage.

We recommend that the Residential Flat Design Code include explicit direction to developments to provide adequate storage space. Secure, accessible and adequate storage is frequently overlooked in building design, but has been identified as one of the most important considerations in promoting active transport. Storage should be multi-purpose and inclusive. Adequate storage is not just useful for bicycles, but also for a range of other essential items such as prams, wheelchairs and sporting equipment.

We also provide recommendations relating to accessibility, families and children, policy, decision making, resourcing and the use of case studies to demonstrate best practice.

Contents

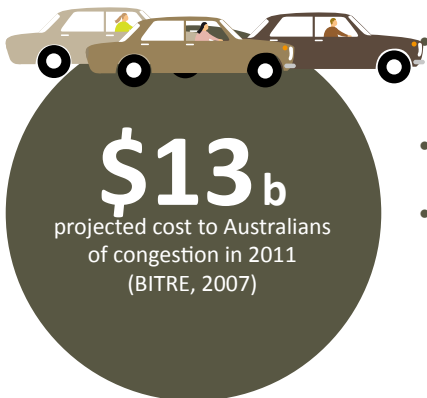
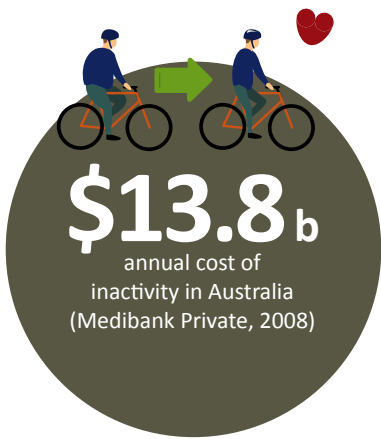
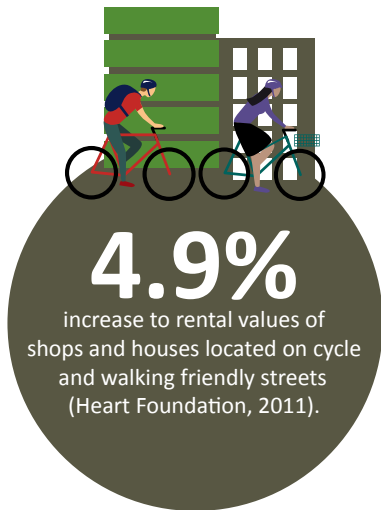
1. Why active transport matters

2. The Australian policy landscape

3. Recommendations

4. Specific responses to the SEPP 65 discussion paper

5. References



1. Why active transport matters

Increasing the use of active transport modes (ie. walking, cycling, public transport) has the potential to offer significant benefits to government and the community. There is compelling evidence which suggests that an increase in active transport can deliver significant cost savings to government, reduce traffic congestion, improve the health of the population, and contribute to a greater sense of community cohesion and well-being.

Health benefits

- Reduced incidence of lifestyle diseases within the community such as heart disease, diabetes, obesity
- Benefits to businesses through improved health of employees and reduced absenteeism
- Improved health from reduced air pollution
- Mental health and well-being benefits derived from increased exercise and greater interaction with the local community and environment

Environmental benefits

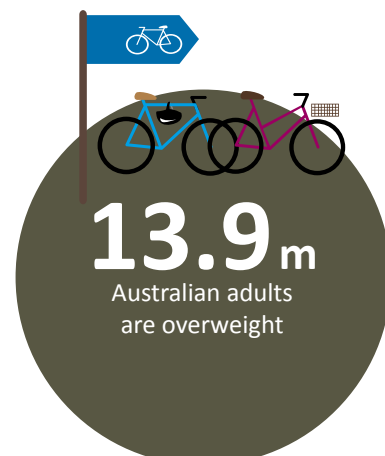
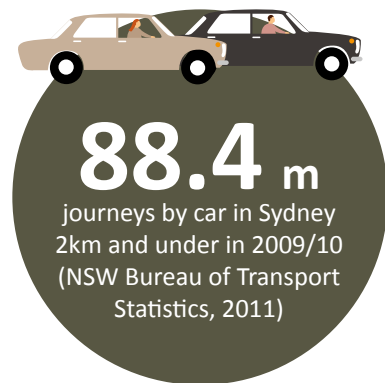
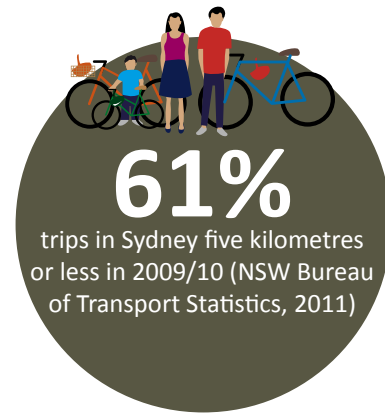
- Improved air quality
- Reduced greenhouse gas emissions, helping to meet Australia's international health and climate change targets
- Reduced reliance on fossil fuels
- Potential to increase open / green space / landscaping (eg. through reduced need for car parking)

Wider community benefits

- Reduced traffic congestion
- Greater interaction amongst neighbours and citizens
- Potential for reduced crime through increased community surveillance on the street
- Appreciation of the local environment
- Improved driver behaviour (cyclists are generally more aware and patient drivers)

Financial benefits

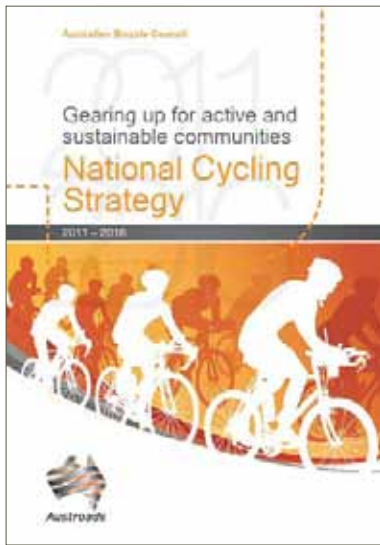
- Significant and proven financial benefits for government in relation to health, productivity and environmental savings
- Reduced road maintenance costs
- Financial returns for developers through increased value of real estate, reductions in costs of providing car parking, and potential for reduced development costs through development incentives and concessions
- Financial benefits to home and business owners as streetscape enhancements add value to an area and are associated with higher rents and the attraction of new businesses. There is good evidence to show that improving walking and cycling environments significantly raises private property values (Heart Foundation, 2011).





2. The Australian policy landscape

To be effective, measures to promote sustainable transport need to be embedded in every level of planning and design, from state planning policies and building codes, through to local zoning regulations, development control plans, and clever building designs. As such, the review of SEPP 65 and the Residential Flat Building Code represents an important opportunity to promote sustainable transport.



A growing number of State and Federal planning guidelines reinforce the need for integrated transport and land use planning, including measures to promote sustainable transport and active living.

Federal

Urban design protocol for Australian cities

The Australian Government's Creating Places for People—an urban design protocol for Australian cities, was launched in November 2011. The protocol is the result of two years of collaboration between peak community and industry organisations, and governments at all levels. It provides broad principles for urban design that take into account the unique characteristics of a location, people's enjoyment, experience and health, and encourages excellence and collaboration in the design and custodianship of urban places. The protocol is strongly supportive of walkable and bikeable neighbourhoods.

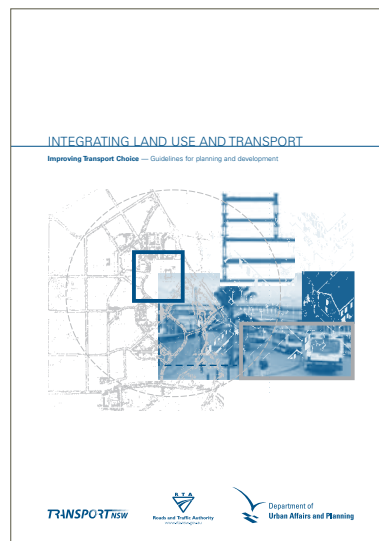
National Cycling Strategy 2011-16

The National Cycling Strategy, released in 2010, aims to double the number of people cycling in Australia by 2016 to mitigate the predicted costs to the community of inactivity, congestion and pollution. One of the strategy's priorities includes the requirement that government agencies address cycling needs in all relevant transport and land use planning activities.

New South Wales

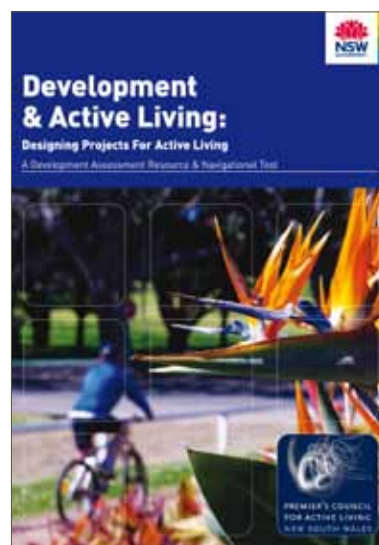
Improving Transport Choice – Guidelines for Planning and Development

In August 2011 the NSW Department of Urban Affairs and Planning; Transport NSW; and the Roads and Traffic Authority released guidelines as a part of the Integrating Land Use and Transport policy package. The guidelines provide advice on how local councils, the development industry, state agencies, other transport providers, and the community can i) better integrate land use and transport planning and development ii) provide transport choice and manage travel demand to improve the environment, accessibility and liveability. In particular they provide principles, initiatives and best practice examples of land use and development design that encourages sustainable transport modes such as public transport, walking and cycling over private car use.



Designing Places for Active Living

In June 2010 the NSW Premier’s Council for Active Living (PCAL) released a series of resources to support state government agencies, local councils and developers, to build environments that support active lifestyles.



NSW Bike Plan

The NSW Bike Plan, released in 2010, identifies opportunities for community and business stakeholders to work with the NSW Government to deliver a shared vision for cycling. The plan commits the NSW Government to “planning cycling-friendly places and promoting cycling-friendly development decisions.”

Planning Guidelines for Walking and Cycling

In December 2004 the NSW Department of Infrastructure, Planning and Natural Resources and the Roads and Traffic Authority released guidelines to assist land use planners within government authorities and private practice to encourage the provision of walking and cycling. At the broadest level, they show how metropolitan strategies, masterplans and local environmental plans can help create urban form that is conducive to walking and cycling. At a more detailed level, they show how development control plans, developer contributions plans and development assessment processes can reinforce these goals through funding mechanisms, provision of facilities and design outcomes.





Residential developments must consider their local transport context and provide links and wayfinding to public transport and bicycle infrastructure.

3. Recommendations

The SEPP 65 Design Principles and Residential Flat Building Design Code should explicitly include references to active transport.

Principle 1: Context

The primary community opposition to new developments relates to traffic impacts. It is in the interest of developers and consent authorities to minimise car use by potential residents to improve the acceptability of new developments.

To successfully reduce car use, developers must consider the transport context into which medium and high density developments are placed. Brownfield and other redevelopment sites in existing communities must provide connections with existing and planned active transport networks. Larger scale neighbourhood development must additionally consider the active transport networks in their adjacent communities.

Considerations need to be made of site permeability, links to public transport and bicycle networks and signage.

- **Permeability:** provide public access easements through the building site to facilitate pedestrian and bicycle traffic through neighbourhoods, while preserving security.
- **Links to transport networks:** ensure developments connect to existing and planned transport networks such as railway stations, bus stops and bicycle networks.
- **Signage:** prominently display signage to local transport infrastructure (eg. direction and distance to nearest station, bicycle path etc).

Principle 2: Scale

The role of scale in making the streetscape inviting to people and encouraging them to walk and cycle must be recognised. Residential developments in particular should consider what elements a person on foot or on bicycle can identify. Buildings should be built with features that invite interaction on this human scale rather than at an automotive scale.

Principle 3: Built form

People's health is profoundly influenced by their immediate surroundings. The built environment most impacts on health in the following ways:

- asthma and obesity in children
- diseases of inactivity in adults
- mental health, and
- social well-being and happiness.

We recommend that the SEPP and design code incorporate principles that:

- ensure designs cater for community health and wellbeing, and
- recognise the role design plays in achieving community outcomes beyond aesthetics such as social cohesion and equity.

Principle 4: Density

As developments with medium to high densities cater for a higher residential population, so too should these types of developments have greater requirement to implement measures to promote sustainable and active transport.

Principle 5: Resource, energy and water efficiency

Design Principle 5 currently reflects too narrow an interpretation of sustainability for its focus on building efficiency. We recommend that this Principle should be broadened to also include environmentally sustainable building construction methods, sustainable occupation, encouragement of mixed-use developments and strategies to facilitate sustainable transport.

To maximise the value of resources invested in residential buildings, they should have a life longer than our own. To achieve this our buildings and homes need to do more than look good. They need to respond to the challenges of rapidly changing social expectations and needs. They also need to respond to environmental challenges.



Our buildings need to respond to the challenges of rapidly changing social expectations and environmental needs. Catering for active transport presents architects and developers with opportunities for creativity and differentiation.



Car free areas where children can learn to ride and practice skills are essential. The Japanese development pictured above incorporates traffic calming with low speed limits and narrow roads to provide an inviting space for riders of all ages and abilities.

Principle 6: Landscape

The preservation of open and green space on site to encourage connection with the environment and active living should be a priority.

Existing trees should be retained where possible and planting in front and rear setbacks and the road reserve encouraged.

Plantings should be encouraged to reduce the visual impact of fences and paved surfaces, and improve the quality of the public domain for people walking and cycling.

At the same time the principles need to ensure landscaping and tree plantings do not create a safety hazard for people walking and cycling. Considerations include ensuring plantings do not obscure visibility near driveways, do not have root systems which are likely to damage pathways and that do not drop excessive volumes of leaves or berries which can create slip hazards.

Principle 7: Amenity

Provision of safe (car free) outdoor areas where children can learn to ride and build their confidence are of key importance.

Principle 8: Safety and security

Developments should provide personal property security for residents and visitors and encourage crime prevention by providing:

- access for people walking and cycling separated from motor vehicle access (where possible, motor vehicles should enter from the rear of the property).
- site planning that allows, from inside each dwelling, general observation of the street, the site and the approaches to the dwelling's entries and parking areas (bicycle and car)
- dwellings designed to allow residents to see who approaches their homes without the need to open the front door, and
- shared entries that serve only a small number of dwellings and that can be locked, where shared entries are required
- conveniently located, secure storage for bicycles (accommodating both visitors and residents) which satisfies the rate of provision specified in the NSW Government Planning Guidelines for Walking and Cycling.

Principle 9: Social dimensions and housing affordability

We recommend that SEPP 65 specifically encourage the greater use of mixed use development and zoning to stimulate local economic activity and increased active transport use. For example, allowing a development to accommodate shops, cafes and day care centres on the ground floor of large residential apartment buildings. This can help to reduce the number of car trips needed by residents and encourage more walking, cycling and local community interaction.

Supporting sustainable transport can significantly reduce cost of living expenses for households. The cost of owning and running a car is recognised as particularly burdensome for lower income families. Reducing the need for a second vehicle or providing infrastructure that allows families to altogether do away with motor vehicle ownership can significantly reduce financial stress for families.



More than half of the households in NSW own at least one bicycle. Failure to address storage requirements can result in poor functionality and aesthetic outcomes for residents and the wider community.



<http://seattletimes.nwsource.com>



Principle 10: Aesthetics

With more than half the households in NSW owning a bicycle, failure to address storage requirements can result in cluttered balconies, communal stairwells and neighbourhood pathways. Poorly stored bicycles are often exposed to the elements which results in poor maintenance and can result in increased incidents of abandonment and theft.

Steve Sauer's tiny 55m² Seattle apartment shows the value of a good fit. Creative storage solutions allow the small space to cater for two bicycles.

4. Specific responses to the SEPP 65 discussion paper

Parking (6.7)

Q. Should there be a reduction in car parking rates for sites with good proximity to transport and centres?

A. Yes, in fact the SEPP should state that in areas with easy access to public transport and active transport networks, consent authorities should allow residential flat buildings to have no minimum requirement for private vehicle parking (and only provide bicycle parking).

The SEPP should also include minimum rates for bicycle parking/storage. For example provide storage for a minimum of:

- two bicycles and accessories per bedroom if the development is located within a 10 km radius of a major employment zone or transport hub, and
- one bicycle and accessories per bedroom if the development is located outside this area.

Secure, accessible and adequate storage is frequently overlooked in building design, but has been identified as one of the most important considerations in promoting active transport. We recommend the inclusion of the following key storage design considerations to promote active transport in the Residential Flat Design Code.

Multi-purpose storage

Storage should be multi-purpose and inclusive. Adequate storage is not just useful for bicycles, but also for a range of other essential items such as prams, wheelchairs and sporting equipment.

Secure and safe

For residents, bicycle storage should be safe and secure, preferably undercover and caged with security access to deter theft.

For visitors, bicycle storage should be secure, visible, easy to access and preferably protected from the elements.



Storage is not just useful for bicycles, but also for a range of other essential items such as prams, wheelchairs and sporting equipment.



The master-planned community ParkCity in Hanoi Vietnam is 13 km from the city centre. It includes 7,004 assorted homes, consisting of town villas, townhouses, villas and apartments, in addition to an 11.46ha central park and lake, a community clubhouse and sports centre and public international schools.

The multi level basement parking in the apartments provides spaces for 444 cars and 791 bicycles.

Sufficient Quantity

More than 50% of households in NSW need to store at least one bicycle (Austroads, 2011) and bike ownership is growing.

NSW bicycle ownership by household 2011	
No. of working bicycles	Household proportion
One	17.2%
Two	12.9%
Three	8.8%
Four	5.5%
Five	2.5%
Six and more	3.7%
None	49.5%

Source: Austroads (2011)

There is a need to provide sufficient quantity / sized bicycle storage which better reflects actual rates of ownership. This should be adequately reflected in the residential flat building design code (e.g. It is recommended that an appropriate metric be developed such as number of secure bicycle spaces which must be provided by floor space area and take into consideration location).

Bicycle Dimensions

The amount of free clearance space vertically and laterally needed is required for suitable siting of Bike Racks.

Storage dimensions	
Standard bicycle dimensions	
Handlebar height	0.75 - 1.10 m
Handlebar width	up to 75 cm
Bicycle length	1.5 - 1.8 m
Minimum storage dimensions	
One standard bicycle	
Height	1200 mm
Width	1000 mm
Depth	2000 mm
Door Aperture	780 mm
Two standard bicycles	
Height	1200 mm
Width	1500 mm
Depth	2000 mm
Door Aperture	780 mm



Consideration should also be made to cater for cargo bicycles which more residents are investing in. These bicycles are typically longer than standard bicycles and require a wider turning circle to manoeuvre into and out of parking spaces.

Accessible

Storage facilities should be easily accessible, which includes:

- level access from street or footpath
- conveniently located (eg. close to access doors and lift wells)
- entry ways should be wide enough to accommodate easy access
- lifts in multi-storey buildings should be large enough to easily accommodate bicycles as well as other residents, and
- clean access (i.e. access to storage is through a wet area, such as a non-carpeted entry way).

Visible and attractive

Storage should enhance, and not detract from, the aesthetics of the building and its surrounds.

Division 43 in Portland Oregon is a 29-unit complex. Floor plans include studio, one bedroom + loft, and two bedroom designs. The development is only a short bike ride to the city centre and includes enclosed bike parking for residents, bike parking for visitors and a bike workshop.



http://www.flickr.com/photos/forrest_brown/

This apartment block in Tokyo provides bicycle parking on the roof. Roof space is a much under utilised space in Australian high density development.

Creative

Storage should encourage better use of under-utilised spaces eg. roof spaces, under stairwells and in height corridors.

Flexible

Storage should be made to be easily scaleable if demand grows.

Co-located with other infrastructure

Consideration should be made of co-locating storage with a communal service bay for cleaning and conducting basic bicycle maintenance.

Accessibility (6.8)

Q: Should this section be renamed accessibility?

A: Yes. It should also include provisions for people to ride bicycles.

Q: What additional specific aspects should be included?

A: We agree with the recommendations that:

- access ways should cater for strollers, wheelchairs and bicycles throughout the development
- individual entries to ground floor apartments are to be promoted
- rules of thumb relating to Australian Standards by providing barrier-free access to at least 20 percent of apartments. An acceptable definition for barrier-free would include the themes of unobstructed, continuous, direct and convenient access from streets or cyclepaths and adjacent uses; and prominent and well lit passageways, with passive surveillance.

In addition, we recommend developments should:

- provide attractive and safe environments for people walking and cycling
- minimise potential conflict between people walking, riding a bicycle and driving a motor vehicle by separating those flows
- provide convenient access to bicycle parking for residents and visitors
- include directional signage to local trip generators, the local bicycle network and public transport links
- provide a locality map fixed in building lobbies and other common areas, identifying safe and direct routes to local trip generators such as shops, schools, parks and public transport, and bicycle networks
- provide appropriately located entrances to all buildings for people with bicycles. Entrances should be: unobstructed, direct and convenient; accessible from streets, cyclepaths and adjacent uses; prominent and well lit, with passive surveillance.



- have high profile and safe pedestrian and bicycle links from the site which connect logically to the existing pedestrian and cycle networks and that provide access to public transport services or local facilities
- prepare a Traffic Management Plan (TMP), which maintains pedestrian and bicycle connectivity during construction
- provide a Transport Management and Accessibility Plan (TMAP) for larger developments as an agreed package of actions between the authority, the proponent and other relevant stakeholders, to:
 - manage transport impacts of the development
 - maximise the use of public transport, walking and cycling
 - reduce Vehicle Kilometres Travelled (VKT) growth by cars and commercial vehicles generated by the development
 - reduce car reliance, and
 - minimise the impacts of freight, whilst allowing for efficient freight movement. (NSW Government, Planning Guidelines for Walking and Cycling)

Library, kitchen and bike parking have been creatively woven into this small residential space by San Francisco architect David Baker.



Colin N Jones



Gazelle Bicycles

Developments should consider the need to store cargo bicycles. Inner city residents in particular are increasingly investing in cargo bicycles instead of a car.

Other matters in Part 3 of the Residential Flat Design Code (7.10)

Q: Storage - review metrics and consider provision in other areas, for example a study or hobby area.

A: Refer to the section 'Parking' for our recommendations on storage for bicycles.

Families and children (8.3)

Q: Should the Residential Flat Design Code include a section on families and children?

A: Yes, this section could then include a requirement for safe (car free) outdoor areas where children can learn to cycle to build their confidence.

Q: What key considerations / components should be included?

A: We support the recommendation for more generous entry spaces for prams. We suggest this would also benefit people wheeling bicycles and child carrying cargo bicycles and this should be recognised in the Design Code.

Other General Recommendations

Policy

We note that the SEPP's aims and objectives are to improve the design quality of residential flat development in NSW to 'conserve the environment, minimise resource use and reduce emissions'. Sustainable transport best practice design principles should be clearly articulated in the SEPP 65 and the Residential Flat Building Design Code (eg. a section devoted to sustainable transport design principles and best practice).

The SEPP 65 and its corresponding Design Code need to clearly establish a transport user hierarchy which recognises people at its peak and prioritises in order:

- people walking
- people riding bicycles
- people using public transport
- people using specialist service vehicles, car share and taxis
- people driving private motor vehicles.

Decision making

A Sustainable Transport specialist should be included as a member of the local Design Review Committees. Consideration should be made to including a representative from the NSW Premier's Council for Active Living as a certifier of developments.



<http://hembrow.blogspot.com>

Resourcing

The SEPP or Design Code should consider how to provide developer incentives and concessions for building designs which effectively promote sustainable transport. Where developers provide best practice cycling infrastructure, consider reductions in Section 94 levies, increased floor space ratios, reduced requirements for off-street parking and trade-offs for car share schemes.

Case studies

The Design Code should provide case studies and photographs demonstrating best practice in planning, parking and storage design. A list of resources relating to planning for active living should also be included.

Artist impression of a two bedroom townhouse in the Netherlands. In the red circle bicycle parking with a separate entrance to the street. Parking your bike becomes very convenient like this.



5. References

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Austrroads (2008): Guide to Project Evaluation Part 4: Project Evaluation Data [CPI adjustments 2007>2010].

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Heart Foundation, 2011, Good for Business: The benefits of making streets more walking and cycling friendly

The Herald/Age Lateral Economics, 2011, Index of Australia's Wellbeing: Final Report

Medibank Private, 2008, The cost of physical inactivity

NSW Bureau of Transport Statistics, 2011, 2009/10 Household Travel Survey: Summary Report 2011 Release

NSW Government, 2004, Planning Guidelines for Walking and Cycling



Parking must cater for different users. These images shows a secure long term parking area for residents and courtyard parking appropriate for short term visitors in residential developments.



<http://178z.org/architecture>

Authors

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Sarah Wigglesworth Architects designed this bike store in Bermondsey, London. The structure can store 76 bikes in two levels, using a system designed by bicycle rack producers Josta. The building is constructed from 13 portal frames, clad externally with triangular, stainless-steel panels and internally with translucent, glass-reinforced plastic sheeting.



BIKE/SYDNEY 

www.bikesydney.org