TRANSFORMING CITIES
TO ACHIEVE A FINANCIALLY AND ECOLOGICALLY SUSTAINABLE FUTURE

Steve Thorne
Design Urban Pty Ltd
70% of the world's population will live in cities.

Cities are responsible for 75-80% of the world's greenhouse gases.
Melbourne @ 5 million 2022
Melbourne @ 5 million
90% of all city infrastructure required by 2022 already exists.

Conventional responses are to expand existing infrastructure and build more large scale projects.
These responses have high hidden costs.

1000 houses built on the fringe of Australian cities cost $300 million more than 1000 houses built within existing growth boundaries.

Melbourne: Oil & Mortgage Vulnerability
Status Quo

Will cost $110,080,000,000 extra over 50 years assuming that half of all future housing is built on the periphery of Melbourne
Annual Building Activity Spending as a Percentage of GDP

Coal Production and Sale is equal to 2% of GDP and 1% Employment

Melbourne is growing in population at 1.3% per annum
(BIS Shrapnel, April 2010)
Challenge

Re-align the existing infrastructure of cities to produce a more:

- Sustainable
- Liveable
- Economically viable future
This is Happening in Many Cities

From a Policy point of view
Its about the Cities – and HOW we grow
DECENTRALISATION TO CONCENTRATION

Glasgow
QUALITY PUBLIC INFRASTRUCTURE

Bordeaux
SHIPYARDS TO SUSTAINABILITY

Malmo Bo01
FROM BLIND SPOT TO CITY OF CULTURE

Temple Bar, Dublin
PEOPLE, PLACES AND TRANSPORTATION

Bogota
Rediscovered Rivers
Seoul, South Korea
Rediscovered River
Seoul, South Korea
Rediscovered River
Arhaus, Denmark
MONOFUNCTIONAL TO MULTIFUNCTIONAL

Melbourne
Density – Mixed Use
1997
3,763 dwellings

1997
3,763 dwellings

red dots = 5 dwellings
yellow dots = convenience store
2002

9,895 dwellings
Status Quo is not an option!

At the same time destroying the “Australian Dream” of a home and land package is not an option.

So What are Our Options?

‘The 7.5% City’
3% OF METRO AREA
Known redevelopment sites 1.5%
SUBURBS - 90% of METRO AREA
Melbourne @ 5 million

- Transport orientated developments around railway stations-activity centres = 3% of Metropolitan area.

- Intensification of development along road based public transport corridors = 3% of Metropolitan area.

- Known redevelopment sites = 1.5%

- Productive Suburbs = 90% of Metropolitan area
Activity Centre Focus

• Utilizes only 3% of the existing development footprint.

• Mixed use high density low rise developments within walking distance of railway stations.

• Maximum 8 storey development.

• Quality streets with 75% active frontages.

• High environmental standards.

Capacity 6,895 ha. @ 60% take-up = 4,200 ha.
840,000 persons @ 200 per. per hectare.

SOURCE; Melbourne University ARC Research paper. Kim Dovey et al.
Corridor Intensification

• Utilizes only 3% of the existing development footprint.

• Benefits and supports public transport.

• Facilitates integrated and accessible affordable housing.

• Provides services, some employment and public transport within walking distance of majority of citizens.

• Builds on existing trends.

• Facilitates distributed energy and water management reducing long term vulnerabilities and expenditure.
Melbourne overview showing 4 study areas
Urban Design Principles

- Sites with rear vehicle access via lanes
- Lanes provide good interface with lower density hinterland
- Ground floor to be either “commercial capable” or retail – limited scope for residential at ground floor
- Studio units on garages to lanes – maximum 2 storey to provide interface with existing detached dwellings
- Tallest elements built to front boundary
- Height determined by locality and a maximum 6 storeys
- All building pedestrian entrances directly from street
Transport Corridor: Urban Planning Overlay

1. applicable streets

2. heritage

3. height limits

4. parking

Limitations
5. Setbacks

6. Active frontages

7. Passive surveillance

8. Freedom zones

9. Access
St Georges Road
<table>
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Alphabetical (including blocks over 25m frontage)

No lane access to the rear
Development Scenarios

Magenta
1 Shop
1 Dwelling

Magenta
3
2
1

6m
30m

G
Shop
Development Scenarios

Yellow
2 Shops
5 Dwellings

Diagram showing floor plans and elevations for different levels, including shops and dwellings.
Development Scenarios

Green

3 Shops
7 Dwellings
Development Scenarios

Navy
4 Shops
10 Dwellings
Development Scenarios

Cyan
4 Shops
12 Dwellings
Development Scenarios

Red
2 Shops
6 Dwellings
Development Scenarios

Orange
4 Shops
14 Dwellings
Nicholson Street, East Brunswick - looking south to the city
POSSIBLE FUTURE

Nicholson Street, East Brunswick - artists impression
Johnston Street study area (high level)
Johnston Street study area (medium level)
POSSIBLE FUTURE

Johnston Street, Abbotsford - artists impression
Maribyrnong Road study area (high level)
POSSIBLE FUTURE

Maribyrnong Road - artists impression
Riversdale Road study area (high level)
NOW

Riversdale Road, - looking west to Riversdale Park
POSSIBLE FUTURE

Riversdale Road - artists impression
Legend
- Green: Tram Routes
- Orange: Target Density (Bus Victoria)
- Blue: UGB
CADASTRAL PARCELS

Legend
- Tram / Light Rail
- Target Bus Line
- Cadastral Parcels

Metropolitan Cadastral Parcels = 1,571,532
SPECIAL BUILDING ZONES
(CBD, Southbank, Docklands, St Kilda Road)

Legend
- Tram / Light Rail
- Target Bus Line
- Cadastral Parcels

Tram Potential Sites = 25,128  Bus Potential Sites = 96,480  Total = 121,608
SELECT PARCELS ALONG TRAM and TARGET BUS CORRIDORS

Legend
- Tram / Light Rail
- Target Bus Line
- Cadastral Parcels

Potential Sites = 25,128  Bus Potential Sites = 96,480  Total = 121,608
Tram Potential Sites = 23,505  
Bus Potential Sites = 95,450  
Total = 118,955
PUBLIC USE AND INDUSTRIAL ZONES

Legend
- Green: Tram / Light Rail
- Yellow: Target Bus Line
- Grey: Industrial Zone
- Pink: Public Use Zone

Tram Potential Sites = 23,202
Bus Potential Sites = 91,252
Total = 114,554
Legend
- Tram / Light Rail
- Target Bus Line
- Rear Laneway
- Urban Growth Boundary

Note:
Laneways have been derived based on gaps between cadastral parcels

Tram Potential Sites = 18,188  Bus Potential Sites = 22,440  Total = 40,628
RECENTLY DEVELOPED SITES AND SITES IN PLANNING (DPCD)

Legend
- Green: Tram / Light Rail
- Yellow: Target Bus Line
- Purple: Recently Developed Building

Tram Potential Sites = 18,118  Bus Potential Sites = 22,038  Total = 40,156
Tram Potential Sites = 16,307  Bus Potential Sites = 20,570  Total = 36,877
(Remove 50% of sites within the heritage overlay)
Legend
- Green: Tram / Light Rail
- Yellow: Target Bus Line
- Light Blue: Frontage < 6m
- Cyan: Urban Growth Boundary

Tram Potential Sites = 12,439
Bus Potential Sites = 18,883
Total = 34,753
AREA OF AVAILABLE SITES

Legend
- Green: Tram / Light Rail
- Yellow: Target Bus Line
- Pink: Available Sites

Tram Potential Sites = 12,439
Bus Potential Sites = 22,038
Area Ha = 1,418
Area Ha = 5,275
Total 34,477 Sites
## Results

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<thead>
<tr>
<th></th>
<th>Tram</th>
<th>Target Bus Lines</th>
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<tr>
<td>Sites available for densification</td>
<td>12,439</td>
<td>22,038</td>
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<tr>
<td>Total area (Ha)</td>
<td>1,418</td>
<td>5,275</td>
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<td>Current population</td>
<td>48,630</td>
<td>158,250</td>
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**Proposed Density Range 180 - 450**

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<th>High</th>
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<tr>
<td>Net population increase</td>
<td>1,003,950</td>
<td>2,457,310</td>
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Tallinn, Estonia
Lydia Koidula 24

RESIDENTS / ha:

- 237 residents / ha

- GFA: 1071 m²

- 102 dwellings / ha.

(Source: J.MOZAS, J.ARPA: D BOOK, Density, Data, Diagrams, Dwellings, '07)

3+1 Architects 2006
Mexico City, Mexico
Calle Alfonso Reyes 58. Colonia Condesa

RESIDENTS / ha:

449

- 179 dwellings / ha
- 449 residents / ha.
- GFA: 2009 m²
Vancouver, Canada

4387 West 10th Avenue

RESIDENTS / ha:

553

- 142 dwellings/ha
- 553 residents/ha.
- GFA : 1932 m²

(Source: J.MOZAS, J.ARPA: D BOOK, Density, Data, Diagrams, Dwellings, '07)

LWPAC 2006
Potential net population increase @ 400 p/ha in thousands = 2,457,310
**Apartments selling best in real-estate revolution**

**Rapid change over past five years**

**By MARIA DOBIN**

PARIS—Rental apartments are selling like hotcakes in Paris, filling up in a matter of days. The demand for rental apartments has been increasing at a rapid pace, particularly among young professionals and students.

The change is most evident in the 15th arrondissement, where luxury apartments are selling out within just a few days. In the past, it would take weeks or even months for an apartment to find a new tenant.

**Cup still rosé but maybe a tad early**

**By BRIGID SMITH**

IN 2009, the Melbourne Cup day began to become the AFL grand final if organizers wanted to keep their punters in the mood to drink. In 2010, the day was still a favorite with many, particularly the younger crowd.

Their findings show that low-lying coastal parts of the world such as cities and towns along the east coast are at risk from sea-level rise and increased storms. Polymorphic plants, such as roses, are also forecast to flower up to 30 days earlier than they do now.

Marcella University mathematician Malcolm Clark worked with the University of Edinburgh, to develop the model, which is based on the relationship between air temperature and flowering time. They found that for every degree the climate warms, flowering would begin about 6 days earlier in Australia, with species such as cherry blossom, ornamental pear, and peach and grapevines more affected.

In Victoria, Linn and Tony Silvancescu’s 24-hectare garden in East Keswick boasts 100 Italian and 100 Japanese roses, as well as grapevines.

The predictions are based on the idea that the first flowers are generally seen at 18°C or warmer. The trend would likely continue until October, he said.

The victors, however, were the plants that produced two crops of flowers in one season. In 2010, Clark said the rose was 18% more than the usual bloomer.

**Beyoncé shines, a world away from scandal**

**By STEVE BUTCHER**

A FORMER teenage girl kid with a heroin addiction who turned her life around to become a psychologist faces a potential threat of losing her license after admitting to an affair with a patient.

Margaret Schirmer, also known as the "emotive emotional relationship," has been found guilty of unprofessional behavior by the Health and Administrative Tribunal. Mr. Clemens said she testified that night without having sex, but from there on they lived together until the relationship ended at a point in October 2007 after Schirmer claimed there was "a whole lot of sex emotionally abuse.

Andrew Clemanov, the Psychologists’ Registration Board of Victoria, said the Victorian Civil and Administrative Tribunal that the man was surprised when Schirmer suggested he put the patient up for early discharge and said in "the unusual relationship" in which he was feeling emotionally abusive.

Ms. Harley said Schirmer admitted sending sexual messages to her before the affair started. Schirmer claimed that their relationship ended immediately in October 2007 after she testified that she had to end their relationship due to her fear of what would happen.

Mr. Clemens said she was very nervous but felt it was "the right decision" and that she had "done the right thing." He added that she was "very happy" with the outcome.

"When the misconduct is serious, as it is in this case, it's not necessarily a disciplinary issue," he said. "It's more about protecting the interests of the patient and the public."
Motorists showing signs of freeway confusion

BY CLAY LUCAS
TRANSPORT REPORTER

THE series of entry and exit ramps created by the government's $1.4 billion widening of the West Gate and CityLink freeways is leaving motorists baffled and often lost.

The government will change the new freeway's signage after a review of the project found it was confusing and misunderstood.

The RACV's public policy manager, Brian Negus, said the hundreds of millions of dollars spent improving the freeways had left many motorists bewildered, especially those using interchanges for the first time.

The roadworks — which have introduced a series of new flyovers and exit and entry ramps — aim to reduce the number of drivers slowing down traffic by intermingling and weaving across lanes.

Mr Negus said the changes meant drivers had to be prepared up to a kilometre before to get into the correct lane.

"You have to make your decision earlier," he said.

"They need to review the signage, to look at whether they can provide forewarning about what people are expected to do. Some of the complaints we get are people saying they didn't know early enough what they needed to do."

The works are being carried out by a joint venture of VicRoads and Transurban. Project director John Cunningham said research had been done with motorists and it had found "some confusion". This had been caused by both the signage and the changed road configuration, he said.

"We will be making some changes to the signage as a result of our review."

The West Gate and parts of CityLink will be closed again on Friday and Saturday nights this weekend, to test a new lane-use management system.
City of Münster, Planning department
Advertising campaign 2001
Comparison of amount of space required to transport 72 people

72 bicycles = 90sqm
Based on 1 person per bike

60 cars = 1000sqm
Based on 1.2 people per car

1 bus = 30sqm
Based on 72 people per bus
Curitiba
Curitiba

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<tr>
<th>Line</th>
<th>Capacity</th>
<th>Buses</th>
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Interdistrict Line

Tourism Line

Direct Line

Double Articulated
An Access Economics report prepared for Diabetes Australia estimates the total economic cost of obesity in Australia in 2008 was a staggering $58 billion.

Public transport users vote with feet

By CLAY LUCAS
TRANSPORT REPORTER

PUBLIC transport users get a daily average of 41 minutes physical exercise, compared with an average of eight minutes for those who only drive, according to an analysis of Victorian travel data.

Research completed by the Bus Association of Victoria has found that those who use public transport in Melbourne are likely to get their recommended daily dose of physical activity as a "side effect" of their travel.

Exercise guidelines produced by the federal government recommend that adults spend at least 30 minutes a day walking, cycling or doing another activity that increases their heart rate.

An Access Economics report prepared for Diabetes Australia estimated the total economic cost of obesity in Australia was about $58 billion in 2008.

A map produced as part of the Bus Association's study also indicates how much people who live in each of Melbourne's council areas either walk or cycle. It shows that those in Melbourne's inner areas, which in most cases have easier access to public transport, get much more exercise as part of their daily travel routine than those who live in outer Melbourne.

Bus Association policy manager Chris Loader said the study showed that improving public transport services was crucial. "The research demonstrates that it brings significant public health benefits," he said. "We need better public transport in Melbourne's middle and outer suburbs."

The Heart Foundation's chief executive, Kathy Bell, said the survey highlighted the need for more outer-suburban transport services, because one impact would be improved health.

"People in Melbourne's growing outer suburban areas are missing out on satisfactory levels of public transport services and also on the health benefits of walking and cycling that are associated with regular public transport use," she said.

The study's figures are derived from the state government's Victorian Integrated Survey of Travel and Activity, released last year. It surveyed 43,800 people in households in Melbourne and regional Victoria. The Bus Association analysis compared public transport users with those who used a vehicle to get around.

'people who used public transport on a particular day, also spent an average 41 minutes walking and/or cycling as part of their travel.' Chris Loader The Age March 12 2010
Productive Suburbs

This comprises 90% of the metropolitan area and remains the ‘Australian dream’.

• The home as a financially positive energy generator in support of the grid and large scale energy facilities achieved through gross feed-in tariffs.

• The backyard as productive food source.

• The street as linear forest-$1 invested in tree planting delivers $5.6 of value back to the city.

• The city as catchment.
NOW

Curtain Street, looking west to Nicholson Street
POSSIBLE FUTURE

Curtain Street - artists impression
REDEVELOPMENT SITES

• The State Governments Urban Development Program database identifies 1,486 key development sites that either have planning approval or are under construction.

• The area covered by these sites is 3161 hectares, or 1.5% of the metropolitan land area.

• Based on the developments where there are known dwelling numbers the average density is over 200 dwellings per hectare. This would conservatively translate to an additional 550,000 people accommodated.

• Add to this the 100,000 house blocks currently owned by VicUrban and private developers and you have an additional potential of 250,000 people within the existing capacity of available land within the metro area.
Key Development Areas
North Melbourne Station – new plaza connection

E’gate development

Docklands

Moonee ponds creek – improve public space
The opportunity

- Engaging the community in the solution
- Avoid the “either or” debates
- Move beyond conventional developments and investment patterns which will only reinforce existing problems
- Transformational solutions that build on existing infrastructure can produce better social, economic and environmental benefits.
- Potential new population capacity (excluding growth areas and infill sites) is 4,050,000 people on 7.5% of the Metropolitan area.

50km² solar panel = energy for all Australia
Acknowledgements

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