AHURI Research Presentation: Planning, Development & Supply

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Towards a new development model for housing regeneration in greyfield residential precincts

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AUSTRALIA'S MAJOR CITIES: What shape will they take? Will they 'get better as they grows bigger’? How to supply future housing without more sprawl?

Source: Melbourne @ 5 Million
The Challenge of Supplying New Housing in Fast-Growing Cities:

3 Horizons of Urban Development

## Infill Targets for Major Australian Cities: Towards more Compact Cities

<table>
<thead>
<tr>
<th>City</th>
<th>Strategic planning document</th>
<th>Time-frame</th>
<th>Target dwellings (number)</th>
<th>Percentage from infill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>City of Cities: A Plan for Sydney’s Future</td>
<td>2005–2031</td>
<td>640,000</td>
<td>60 to 70</td>
</tr>
<tr>
<td>Melbourne</td>
<td>Melbourne 2030: A Planning Update – Melbourne @ 5 million</td>
<td>2009–2030</td>
<td>600,000</td>
<td>53</td>
</tr>
<tr>
<td>South-east Queensland</td>
<td>South East Queensland (SEQ) Regional Plan</td>
<td>2009–2031</td>
<td>754,000</td>
<td>50</td>
</tr>
<tr>
<td>Perth</td>
<td>Directions 2031 Spatial Framework for Perth and Peel</td>
<td>2009–2031</td>
<td>328,000</td>
<td>55</td>
</tr>
<tr>
<td>Adelaide</td>
<td>The 30-Year Plan for Greater Adelaide</td>
<td>2010–2040</td>
<td>258,000</td>
<td>Moving from 50 to 70</td>
</tr>
</tbody>
</table>

Source: National Housing Supply Council, 2010
Infill (Housing) Development

Some Definitions:

**Infill**: new housing built on previously developed land

**Brownfields**: constitute abandoned or under-used industrial or commercial sites associated with an earlier era of economic activity; eg. docklands precincts that served the sea trade prior to containerisation, outdated commercial high-rise buildings, abandoned manufacturing sites, sections of railroad, vacant petrol stations, formerly viable retail sites etc. They are typically owned by a single party, usually government or industry; of a scale which is closer to that provided by greenfield sites for development; contaminated to some degree, depending upon the nature of prior use; and unoccupied, obviating the need for community engagement at a level required of greyfields.

**Greyfields**: those ageing but *occupied* tracts of inner and middle ring suburbia that are physically, technologically and environmentally failing and which represent under-capitalised real estate assets (Newton, 2010).

**Infill = Brownfield + Greyfield redevelopment**

**Brownfield ≠ Greyfield redevelopment**
Current Approaches to Greyfield Housing Redevelopment

1. **Retrofit**: Alterations & Additions to Existing Dwellings
2. **Redevelopment**: Small scale, piecemeal, spatially fragmented eg.
   typically 1:1 (ie replacement), 1: 2-6 (replace one detached dwelling with between 2 and 6 townhouses, depending on size of site)
3. **Regeneration**: involves larger scale renewal of a precinct / neighbourhood – 
housing plus associated infrastructures and land uses; eg:

1 + 2 + 3 (a) + 3 (b) = Necessary but not sufficient (or optimal) for targeted level of infill redevelop’t
WHY?
1. **Greenfield** housing continues to contribute > 50% of net new dwellings

<table>
<thead>
<tr>
<th>Region</th>
<th>Mean</th>
<th>Sum</th>
<th>Count</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner</td>
<td>$2,427,122</td>
<td>$466,007,377</td>
<td>192</td>
<td>0.9%</td>
</tr>
<tr>
<td>Middle</td>
<td>$496,282</td>
<td>$1,775,201,346</td>
<td>3577</td>
<td>17.7%</td>
</tr>
<tr>
<td>Outer</td>
<td>$229,486</td>
<td>$3,780,550,722</td>
<td>16,474</td>
<td>81.4%</td>
</tr>
<tr>
<td>Total</td>
<td>$297,474</td>
<td>$6,021,759,445</td>
<td>20,243</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Infill as % of total new dwellings constructed in Melbourne:
2009: 54.5% of all new dwellings; 48.0% of net new housing
2010: 53.2% of all new dwellings; 46.8% of net new housing
WHY?

2. Activity Centres are not attracting significant additions to housing stock to meet infill targets

<table>
<thead>
<tr>
<th>Activity centre infill as a % of total metro Melbourne infill</th>
<th>New dwellings</th>
<th>Net increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBD</td>
<td>5.6%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Frankston</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Dandenong</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Broadmeadows</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Footscray</td>
<td>0.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Ringwood</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Box Hill</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Total CAD</td>
<td>7.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Principal</td>
<td>2.1%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Major</td>
<td>1.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Specialised</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>10.4%</td>
<td>13.0%</td>
</tr>
<tr>
<td>(N)</td>
<td>8615</td>
<td>8313</td>
</tr>
</tbody>
</table>

Note: Boundaries of Activity Centres as defined by DPCD for CADs and Principal, 200m radius from centroid of Major and Specialised Centres
WHY?

3. Public transport access appears unrelated to higher levels of infill housing redevelopment (except in brownfields); ie car dependency remains factor in greyfields.

<table>
<thead>
<tr>
<th>Public Transport Access level</th>
<th>Metro Melbourne</th>
<th>Brownfield</th>
<th>Greyfield</th>
<th>Total infill</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total residential properties</td>
<td>Net Increase</td>
<td>Net increase as a % of total dwellings in PTAL zone</td>
<td>Net Increase as a % of total dwellings in PTAL zone</td>
</tr>
<tr>
<td>high (7-10)</td>
<td>223974</td>
<td>19490</td>
<td>8.7%</td>
<td>6090</td>
</tr>
<tr>
<td>medium (3-6)</td>
<td>578530</td>
<td>9481</td>
<td>1.6%</td>
<td>18149</td>
</tr>
<tr>
<td>low (0-2)</td>
<td>804308</td>
<td>6353</td>
<td>0.8%</td>
<td>18551</td>
</tr>
<tr>
<td>totals</td>
<td>1606812</td>
<td>35324</td>
<td>2.2%</td>
<td>42790</td>
</tr>
</tbody>
</table>

Note: Public Transport Access Level (PTAL) is a metric (0-10) calculated at the mesh block level level which is indicative of level of public transport access and connectivity servicing precinct populations; Newton et al 2012.
WHY?
4. Untapped Potential of (Melbourne’s) Middle Suburbs

The middle suburbs are persistently failing to meet their share of population and housing in a (rapidly) growing city.

‘The primary intervention point should be The middle suburbs... Without coordination, sustainable outcomes will not be achieved in these areas. The middle suburbs must be the focus of the new urban policy.’ (Major Cities Unit, 2009)
WHY?
4 (cont’d). Untapped Potential of (Melbourne’s) Middle Suburbs

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‘The primary intervention point should be the middle suburbs... Without coordination, sustainable outcomes will not be achieved in these areas. The middle suburbs must be the focus of the new urban policy.’ (Major Cities Unit, 2009)
WHY?

5. Opportunities for precinct scale **medium density infill** redevelopment are being missed

<table>
<thead>
<tr>
<th></th>
<th>Residential Yield of Infill Residential Development (as % total metro infill)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1:1</td>
</tr>
<tr>
<td>Brownfield</td>
<td>2.1</td>
</tr>
<tr>
<td>Greyfield</td>
<td>26.5</td>
</tr>
<tr>
<td>Total (%)</td>
<td>28.6</td>
</tr>
<tr>
<td>(N)</td>
<td>29549</td>
</tr>
</tbody>
</table>

→Lacking Development Model for Greyfield Precinct Regeneration at Medium Density/ Low Rise Higher Density
“... with residential development becoming increasingly synonymous with regeneration – is a different model required to generate shareholder value?” (Jones 2008)

- Property Developers
- Government Regulators
- Community of Property Owners
- Urban Designers and Planners
- Financial Investors
- Manufacturing and Construction
- etc

→ New Model for Greyfield Housing Precinct Regeneration
Transition Process for ‘Wicked’ Urban Issues

Source: Adapted from Loorbach (2007)
Methodology

Investigative Panel

- A new research vehicle for AHURI comprising a series of facilitated workshops designed to bring about direct engagement between experts from the research and policy communities, and practitioners from industry and community sectors, to interrogate a specific policy or practice question

- 3 panels; over 70 experts, including a continuing core group

- Mind-mapping: real time, transparent

- 3 Background Research Papers; 3 Panel Reports

- Final Report
Inhibitors to regeneration of middle suburbs/areas

1. Consolidation of Sites
   - Constricting
   - Inhibits design
   - Lacks incentives for better outcomes
   - Growth Area Authority - no equivalent
   - Poor specs or excessive/inappropriate standards
   - Least resistant approach

2. Planning & Regulatory System
   - State Govt
   - Local Govt
   - Lack of plans for an area
   - Lack of local champion
   - Local governance inhibits change

3. Lack of Leadership
   - Exemplars of quality
   - Lack of design quality

4. Lack of Success Stories
   - Financial Disincentives
     - Higher cost
     - Lack of support

5. For Baby Boomers
   - Lack of Respect for Social 6. & Cultural Heritage

6. Cost of Density

8. NIMBY
   - Emotional
   - Transport

9. Existing Infrastructure

10. Consumer Preferences

Limited housing topography

Place making
   - e.g. Pension means test
   - Higher cost
   - Lack of support
Solution pathways

Solution Pathways

1. Invest In Amenities
   - Continually
   - Give clarity on where and what
   - Strategic agency
   - Independent of politics
   - Implementation process

2. Reform Planning System
   - Independent of politics
   - Implementation process

3. For Transfer
   - Financial Incentives

4. Divide Existing House Into Two
   - Domestic delivery
   - Cost effective and competitive

5. Housing
   - Micro Economic Reform
   - For Higher Density

6. Catalytic Development
   - Early initiators of change
   - Demonstrate projects/investment
   - Employment opportunities
   - Innovation pilots

7. Urban Renewal
   - Remove State Govt & Federal Govt To Have

8. Suburbs
   - Reconfigure Accounting of Good Built Environment &

9. Community Level
   - Discussion At Local

10. Affordability
    - Tenure alternatives
    - Housing topologies
Innovation and ‘Future logic’ for Greyfield Residential Precincts

Metropolitan Region
- Inner city
- Middle suburbs
- Greyfields
- Outer suburbs
- Greenfields
- brownfields
- Activity centre/TOD
- Transport corridor

Greyfield residential precincts

Where?
- Identifying greyfield precincts
- Shared spatial urban into system
  - Mobility intentions
  - Property redevelopment potential

What?
- Design
  - Design/construction interface
  - Integrated Precinct design: housing typology, open space, ESD infrastructure
- Construction
  - Multi-skilled workforces
- Labour
  - Community training and skilling
- Community existing landowners/future residents
- Developers/financiers
  - New finance models
- Governance/authority
  - New urban policy
  - New urban redevelopment authority
  - Reform Code

Who?
INNOVATION 1.
Locating Greyfield Housing
An urban spatial information platform (distributed and integrated across different data layers) to support stakeholder envisioning opportunities for greyfield residential precinct regeneration.
ENVISION: selecting attribute layers and filters to identify prospective precincts for redevelopment/ regeneration
The middle suburbs are where we find the greatest concentration of greyfield dwellings (220,000+ properties where land value represents ≥ 80% of total)
ENVISION Output: Residential properties with high redevelopment/regeneration potential (City of Manningham)
Most residential redevelopment occurring OUTSIDE designated development zones

City of Manningham: ENVISION analysis indicates that majority of housing redevelopment is occurring in fragmented fashion outside Designated Development Zones
INNOVATION 2.
Precinct Redevelopment/Design
New Design Models for Small-Scale Greyfield Housing Redevelopment
(Monash University Architecture for VGA 2011)
New Design Models for Small-Scale Greyfield Housing Redevelopment

(Monash University Architecture for VGA 2011)
Why Precincts?  Potential of Greyfield Precinct Regeneration

- **HOUSING**
  Delivers mix of dwelling types, styles and costs, at higher densities, with some mixed use, while at the same time delivering a more aesthetically pleasing higher amenity neighbourhood than its predecessor.

- **ENERGY**
  Achieves carbon neutrality or zero carbon status with the introduction of distributed (renewable) energy and micro-generation technologies as new elements of ‘hybrid buildings’, capable of generating energy for precinct and national grid.

- **WATER**
  Integrated urban water systems involving water sensitive urban design are best implemented at precinct scale, enabling appropriate mix of technologies for local water capture, storage, treatment and end-use to be introduced in an eco-efficient manner.

- **WASTE**
  Precinct scale re-development can optimise reuse of demolished stock and minimise waste stream from new construction as well as automate waste disposal and maximise recycling from occupied dwellings.
Potential of Greyfield Precinct Regeneration

- **HEALTH**
  Opportunity to reduce land assigned to car transport and reconfigure to encourage active transport modes (walking, cycling).

- **CONSTRUCTION**
  Linking off site manufacture and on-site modular assembly to reduce negative impacts of a traditional construction site, reduce time to ‘construct’, reduce cost of delivery, increase quality to align with manufacture process.

- **SENSE OF PLACE & COMMUNITY**
  Opportunity of creating a distinctive physical neighbourhood and social community, with distinctive look and feel.
INNOVATION 3.
New Models for Financing and Delivery
Innovative Finance Models
e.g. ‘Downsizing’

' Downsizing' = New Unit + Equity Extraction $$$
## Building Cost per m² by Region

<table>
<thead>
<tr>
<th></th>
<th>Inner</th>
<th>Middle</th>
<th>Outer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ / m²</td>
<td>$ / m²</td>
<td>$ / m²</td>
</tr>
<tr>
<td>Detached sole occupancy</td>
<td>1 794</td>
<td>1 152</td>
<td>898</td>
</tr>
<tr>
<td>Detached dual occupancy</td>
<td>1 806</td>
<td>1 298</td>
<td>1 026</td>
</tr>
<tr>
<td>Total detached</td>
<td>1 797</td>
<td>1 177</td>
<td>901</td>
</tr>
<tr>
<td>Low-rise medium-density</td>
<td>1 749</td>
<td>1 218</td>
<td>1 050</td>
</tr>
<tr>
<td>Mid-rise medium-density</td>
<td>1 893</td>
<td>1 637</td>
<td>--g</td>
</tr>
<tr>
<td>Total medium density</td>
<td>1 794</td>
<td>1 233</td>
<td>1 049</td>
</tr>
<tr>
<td>Mid-rise high-density</td>
<td>2 351</td>
<td>1 993</td>
<td>--g</td>
</tr>
<tr>
<td>High-rise high-density</td>
<td>2 732</td>
<td>--g</td>
<td>--g</td>
</tr>
<tr>
<td>Total dwellings</td>
<td>1 825</td>
<td>1 188</td>
<td>903</td>
</tr>
</tbody>
</table>

a) 1 dwelling/1-3 storeys; b) 2 dwellings/1-3 storeys; c) 3-9 dwellings 1-3 storeys; d) 10-30 dwellings 1-8 storeys; e) 30+ dwellings 3-8 storeys; f) 8+ storeys; g) insufficient dwellings

**Challenge:** reducing $/m² building costs closer to the city (e.g. on greyfields) and at higher densities
Prefabrication: concrete panels
VicUrban looks for a modular solution to housing issues

By JUSIN BOWLING

COMING to a suburb near you — ten more apartments — straight out of the factory.

New apartments are quickly rolled off a production line at a Melbourne factory as part of a state government’s plan to house an additional 10000 Melbourne residents.

A new “modular” apartment building in East Coburg could be the future of housing for many in Melbourne.

The 101-apartments “Sticky” development may be the first of many modular apartment developments by government development agency VicUrban — now focused on providing a rapid expansion of new housing in Melbourne’s existing suburbs close to transport, jobs and services.

The parallel construction process, on-site and in the factory makes modular developments twice as fast as conventional construction methods and also reduces costs.

By next year, 64 factory-built apartments were slated to be ready for tenants in a building dubbed “Little Blue” on a land off Little Bunchel Street.

VicUrban chief executive Pou Sanderson said the East Coburg development — Melbourne’s biggest modular apartment development — exemplified what was coming from the government developer.

“VicUrban has an increasing need to accommodate people at volume at an increased speed in which we can achieve into the established part of Melbourne,” she said.

The development, expected to be completed in May, will include 56 public housing apartments, 9 affordable housing rental apartments and 10 one- and two-bedroom apartments for private ownership.

With this development we have got apartments in the $300,000 to $400,000 price range, so they are in a very affordable range,” Ms Sanderson said.

Over the next 20 years, the government says an additional 315,000 dwellings will be needed in Melbourne’s existing suburbs and has asked local councils to consider how many additional dwellings their area can accommodate.

Many units in VicUrban’s target market, in their 50s and a local resident for 30 years, Ms Stella has decided to change from her three-bedroom family home to a two-bedroom apartment at the Nicholas.

“People who have lived in the area want to remain in the area, they don’t want to lose the services,” she said.

Ms Stella, who paid between $400,000 and $500,000, viewed her apartment being assembled in the factory on Friday.

She is a supporter of the modular construction method.
INNOVATION 4.
Pro-Active Community Engagement
Proactive Community Engagement
Urban Spatial information Platform
Community, Finance and Planning
Mobility Intention

Maroondah, Potential Land Redevelopment Index

Maroondah, "Intent to move" - INDICATIVE ONLY

Legend:
- RDI 0.8 - 0.89
- RDI 0.9 - 1.0
- Looking to move now / next 12 months
- Expect to move in 1-2 years time
- Not likely to move in next 3 years
INNOVATION 5.
New Approaches to Development Governance in the Greyfields:

# New urban policy eg. ‘Better Cities’ - type of Program for middle suburban precinct regeneration
# Redevelopment Authority with greyfields mandate
# Regen Code
Future Logic for a Sustainable Growing City

Source: in Newton et al (2011); adapted from Schwartz (2010)