6. CASEY - TRANSITIONAL LANDSCAPE


6.1 Introduction

Background

The project in Hanoi has investigated the impacts of urbanization and industrialization on the peri-urban farmlands. As part of a comparative study, the final project explores the urbanization process in Melbourne, focusing on the expansion of the urban growth boundary and its impact on agricultural production in Casey area. Due to its high population growth, especially its projected population at 5 million before 2030, Melbourne is facing critical challenges in providing affordable housing and infrastructure. However, this challenge is met by the displacement of productive farmlands in the peri-urban areas.

Site observation

The project investigates Cranbourne and Clyde which are on the edges of the urban growth boundary. The urban sprawl process happening in this urban-rural interface has resulted in hybrid models of mixed urban and rural programs such as market gardens surrounded by suburban residential developments or sport venues integrated into production lands, or farmlands are used as buffer zones for factories rather than real food production. The primary role of farms as food production is decreasing giving land for residential projects. Local people are having difficulty in food access due to poor public transport and control of supermarket chains. Research on “foodmiles” in Melbourne shows long distance travel from farms to dinner tables. Therefore, farmlands should be maintained to promote local food production and food access.

Research aims

1. Increasing the visibility of food production process to raise the awareness of the public; bridging the gap between food production and consumption by architecture intervention at critical edges.
2. Promoting local growth food, increasing local food access and food options in peri-urban interface by integrating farming with public infrastructure.
3. Similarities and differences between Hanoi and Melbourne case studies.

Design Strategy

The proposal uses case studies to create an integrated strategy of urban architecture, infrastructure and landscape to promote local growth food in urban growth areas where agricultural production is facing severe challenges of displacement. Applying time phasing, edge intervention and hybrid/cross-programming strategies, the research create new typologies in order to transform the farming production and resist its displacement. Together, the interventions form a network of food production areas for the local population. The research emphasizes keeping agricultural land as an important component of development in new urban growth areas by integrating farming with other programs such as residential, research, commercial and transport infrastructure. The strategic interventions before development will guide the future development of the peri-urban areas and create a sustainable living environment as well as maintaining local culture and industries.
6.2 Background research

City to ‘grow’ 134,000 homes on farmland

By JASON DOWLING

PROME food-growing land on Melbourne’s fringe will be lost to make room for thousands of new homes following a massive urban expansion.

Melbourne is now 43,600 hectares bigger after planning changes that went through Parliament yesterday with the support of the government and opposition.

Melbourne is already one of the world’s largest cities geographically, stretching 106 kilometres from east to west.

While building groups and property developers celebrated the new land for housing in Melbourne west, north and south-east, Casey Council, urban planners and environment groups lamented the expansion.

The new land is to accommodate an additional 134,000 homes for Melbourne and provides 20 years of land supply for new housing.

Casey councillor Geoff Abbott said the council had been ignored in its pleas to protect the invaluable market garden land. “You have got to factor in feeding the people. We think the price of food will go up if we have to put food-growing further out.”

RMIT associate professor of urban planning Michael Fulton attacked the urban expansion. “It will entrench two different types of city, one that has poor transport and poor access to jobs and one closer to the CBD which is opposite,” he said.

Planning Institute of Australia Victorian president David Verchheimer said he hoped this would be the last major urban expansion for a decade.

Greens MP Greg Barber said the expansion was “bad for farming, bad for transport, bad for water supply and makes it much harder to reduce greenhouse emissions”.

Rosemary West, from the Green Wedges Coalition, said the expansion “really means the death of the green wedges”.

Speculators and developers who had bought up farmland in areas now made a part of Melbourne were the big winners.

“It will assist in making houses more affordable for all Victorians,” Gill King from the Housing Industry Association said.

The Urban Development Institute of Australia’s executive director Tony De Duuccino said the expansion would “put Victoria in a better position to retain its competitive advantage over other states in terms of housing affordability” and the Master Builders’ Brian Welch said the decision “gives hope to home owners who want to have their own affordable slice of the great Australian dream”.

While Property Council of Australia Victorian executive director Jennifer Canich welcomed the extra land for housing, she said “it is not the long-term solution to continually move the boundary”. Large builders including Mirvac and Villawood Properties also welcomed the boundary move.

A spokeswoman for Planning Minister Justin Madden said the expansion was “fundamental to maintaining housing affordability”. Opposition planning spokesman Matthew Guy welcomed the urban expansion, but said the Coalition would “retain the urban growth boundary in government”.

Melbourne Urban Growth Boundary Expansion - 30 July 2010 with 43,600 hectares of farmland displaced - Source: The Age
Urban Growth Boundary 2010

The diagram shows 5 new areas of urban growth: Whittlesea, Hume, Melton/Caroline Springs, Wynham and Casey. By overlapping the new urban growth areas with agricultural zones, we can see large farming areas are taken away in Casey which is one of the two most important food supply areas for the Melbourne metropolitan region (the other area is Werribee).
Melbourne Sewer Network

This diagram shows the Melbourne sewer system overlapping with the urban growth boundary and agricultural zone in Melbourne. Statistic shows that 21% of Melbourne’s waste water is recycled for golf courses, market gardens and parks. The rest is discarded into the Port Philips Bay. The waste water infrastructure in Casey area is under the plan of displacement for new residential development. However, this will seriously affect the farming production in this area. It is important to maintain this water recycling system for a sustainable future.
Food Miles: Melbourne

Food Miles “is a term used to measure the transport distance traveled by food products between production and consumption.”1 As we can see in the diagram below, many types of food need to travel a long distance. It raises the question of how to reduce this distance of travel in order to have fresher food and saving the cost of transportation? Instead of relying heavily on supermarket systems and food importation from oversea, local food production and distribution will provide cheaper and fresher food for Melbourne.

1. Abraham, AB, & Gaballa, S 2008, Food Miles in Australia: A Preliminary study of Melbourne, Victoria

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**FRUITS AND VEGETABLES**

- apple, Yarra valley, Gippsland, Goulburn valley, 112.01 km
- oranges - Australian, 567.65 km
- orange juice, 2.023.74 km
- bananas, Northern Queensland (85%) 2.746.2 km
- tomatoes, Vic (summer), Queensland and WA (winter) 1.618.37 km
- potatoes, Vic 155 km
- pumpkins, Shepparton and Mildura, 361.23 km
- lettuce, Werribee, Mornington Pen, Cranbourne, 54.55 km
- carrots, Mildura, Mornington Pen, 311.36 km
- onions, Werribee, Queensland (spring/summer) 782.3 km

**MEAT AND DAIRY**

- full cream milk 347.76 km
- cheese 680.99 km
- fresh/frozen chicken, Mornington Pen, Werribee, Gippsland 93.02 km
- eggs, Tullamarine, Mornington Pen, Gippsland 134.38 km
- beef, Vic 297.79 km
- pork sausages Queensland, Denmark 25.165.49 km

**CEREAL AND LEGUMES**

- rice - Australian 381.29 km
- rice imported - Basmati 12.840.76 km
- rice imported - jasmine Bungkok 9.709.02 km
- rice imported - arborio Naples Italy 18.314.76 km
- bread - Dandenong, Mallee region 486.14 km
- cereal biscuits Adelaide 885.94 km
- instant noodles Pakenham Vic, Fiji, 582.27 km
- baked beans New Zealand 3.131.73 km

**NON-CORE FOOD AND BEVERAGE**

- sugar Mackay or Yarraville Melbourne 2.315.66 km
- canola oil, Brooklyn 320.62 km
- margarine, 1.464.4 km
- chocolate, 14.479.01 km
- black tea, India, Indonesia 8.259 km
- potato chips/crisps 2.023.76 km
Diagram showing the location of city of Casey in relation to the urban growth boundary. The city of Casey is 35 km from the Melbourne CBD.
Casey has poor public transport. The above diagram from Health and Place journal shows findings of a study on the difficulty of local food access in Casey by public transport. People living far from main railway stations and main roads need more than 20 minutes to go to supermarkets and fast food venues. Source: C.M Burns, A.D. Inglis, Health & Place 13 (2007) 877-885
Changing landscape, with new residential developments replacing market gardens and farming activities
**Existing zoning**
The diagram show the new urban growth boundary compared to the old one in 2005. The new urban growth area will take over a large market garden area around the town center of Clyde. Some existing industrial areas which support the agricultural production are surrounded by so called farming zones which would seem only to act as green buffers between industrial remnants and residential developments, rather than real agricultural production.
6.3 Strategic masterplan

Site 1: Market garden, food miles restaurant and research greenhouses (supporting the operation of market gardens by intensifying the edges between industrial, residential and market garden)

Site 2: Township agricultural hub. By actively maintaining a large market garden area before development for food production and create exchanged interfaces with the town center, new residential development sites and transport infrastructure (Clyde station) with small interventions (farming research and food distribution points) are located along the edges of market garden, the new residential development and town centre. Over time, the agriculture hub and the town centre could become one central core and guide the development of the town.

Industrial zone supporting the local agricultural production. Trees will be planted around these zones as a buffer from residential areas.
6.4 Case study 1: Existing market garden in Cranbourne North

This is a large market garden under pressure of residential development. To the south of the market garden are industrial areas including an abattoir, a fertilizer company and concrete plants. So this market garden was chosen first as a case study of agricultural landscape in transition.
6.4.1 Study of edges

Cattle farm fence

Market garden fence

Market garden fences

Dandy factory boundary

Concrete factory fences

Concrete factory fences-hill

Poultry farm fences

Vacant lot fences

Market garden fences - new residential development
Study of edges between the existing market garden, industrial area and residential zone
Study of edges

New residential areas located next to the farming zone create a surreal condition which only happens in the peri-urban interface. However, the use of timber fences stops the visual connection between residential and agricultural zone while fences between farms are permeable. There is an opportunity here to increase the visibility of agricultural production for residential areas.
2. Hillcrest farm - market garden
   Trees planted along the edge between market garden and concrete factory

3. Parkland next to the concrete factory
   Hilly edge between parkland and concrete factory

4. Interface between market garden and residential area
   The market garden is permeable from residential area
   Street acts as transitional zone
6.4.2 Preliminary study: Foodmile Restaurant + Food store + Farming research

The project responds to the studies of edges around the market garden as interfaces with near-by industrial areas and residential zones. It applies cross-programming and edge intensification strategies in order to close the gap between food production and food consumption. The food production programs are the market garden and agricultural research greenhouses. The food distribution programs are the extreme Foodmile restaurant and food store in order to increase local food access with minimal travel distance of food.

The project exposes the process of food production to the public and increases their awareness of what they are eating.
Floor plan of the foodmile restaurant and food store

cattle area

walkway

storage

food store

packaging

restaurant

car park

diversed crop farming

Section through the foodmile restaurant
Perspective - Visibility of farming production to local residents - Increasing local food access
Perspective - Walking track between the foodmile restaurant, cattle area and concrete plant
6.5 Case study: Clyde Town Center Agricultural Hub

From the first case study, the research recognizes the opportunity to maintain a large market garden area before development takes place around the town center of Clyde which is 57 km from Melbourne CBD and 9km from Cranbourne. Clyde has a population of 1224 in 2006. The maintained market garden area will become an agricultural hub sized with the potential to provide food for the existing population of Clyde and its future surrounding residential areas. The edges of the agricultural hub will become exchanged interfaces between the existing market gardens, the town center, new residential development sites and transport infrastructure (Clyde station). Over time, the agriculture hub and the town centre could become one central core and guide the development of the town. Located at the edges of the agricultural hub are a football oval which is similar to the Marysville football oval project, a few farmsteads, the closed Clyde Station and the Clyde primary school. By intensifying and cross-programming these existing typologies, we can support the operation and existence of the agricultural hub as well as increase local food access and provide extra public facilities for the area. However, the project also takes into account the future residential development in the area. If we keep the market gardens (166 ha), we need to increase the density of housing (2400 apartments) around the edge of the agricultural hub. The project also presents an integrated strategy between urban architecture, recreational and productive landscape as well as public infrastructure.
Diagrams show speculative development of Clyde town centre area. Over time, the agricultural hub will become an important productive and recreational landscape for local residents.
Aerial perspective showing the speculative significance of the agricultural hub and the network of agricultural production in relation to future suburban development
Phase 1 diagram - Existing developed areas and potential interventions

- Football oval
- Tennis courts
- Food Festival
- Homestead
- Primary School
- Community garden
- Clyde station
- Market garden
- Residential
- Sport
- Preserved sustainable
- Agriculture enterprise
- Market garden
- Intervention 2
- Homestead
- Farmer market
- Food distribution point
- Multi-functional space
Case study 2
Proposing
Farmer market
Food distribution point
Multi-functional public space
Hybrid greenhouses

Clyde Town Center
Clyde Station (closed)
Market garden
Homestead
Case study 2
Proposing
Farmer market
Food distribution point
Multi-functional public space
Hybrid greenhouses
6.5.1 Intervention 2: Bus stop + Food store + Farmer market + Greenhouses /Housing + Multi-functional public pavilion

The project supports the production and existence of the Clyde agricultural hub. It is the combination of transport infrastructure, food production and distribution as well as public facilities. The intervention helps to intensify the edge of the market garden and create a stronger connection with local residents. It is located at the interface between market garden and Clyde station which is currently closed. With the development of new urban growth areas, the station will need to be re-opened in the future. The project applies cross-programming strategy to propose a mix of programs including a new bus stop, food store, restaurant, hybrid greenhouses (with temporary housing) and a multifunctional public pavilion. The new bus stop helps to increase local food access for the public. The food store sells agricultural products produced by the agricultural hub directly to the local residents. The weekend farmer market creates a public venue for local residents and people in the region to come and sharing fresh food resources. Hybrid greenhouses produce aeroponic organic farming products and also provide temporary housing for farmers and seasonal workers. The multi-functional public pavilion provides spaces for workshops, barbeques and infrastructure for public events such as food festival or community meetings.
Process sketch of the intervention taking into account its surrounding context
Sketch of the floor plan’s development with a hybrid condition of food production, distribution and public infrastructure
Programs
1. New proposed bus stop
2. Food retail store
3. Restaurant
4. Greenhouses
5. Housing for seasonal farmers
6. Multi-functional public pavilion
7. Weekend farmer market
8. Toilets
9. Existing homestead
10. Clyde station (closed)
Perspective view of the new bus stop providing easy access to the market garden and public facilities on the edge of the agricultural hub
Aerial perspective view of the hybrid condition between greenhouses, housing, farmer market, cafe and public pavilion. The intervention provides easy food access from public transport.
Diagram showing a larger regional proposal of possible sites for agricultural production in the urban growth area.
Aerial perspective view of possible sites for agricultural production in the urban growth area at a regional scale.
6.6 Examination Exhibition

Exhibition panels showing 3 projects: Marysville – Casey – Hanoi // Pin-up gallery, Collingwood, Melbourne, 2011
Examination pictures, Pin-up gallery, Collingwood, Melbourne, June 2011
6.7 Reflection

The project in Melbourne has developed ideas and strategies of the first two projects. Melbourne is facing some similar issues to Hanoi such as population growth, housing affordability and urban sprawl as well as the rise of food prices. The expansion of Melbourne urban growth boundary threatened to displace large amount of important farmlands in the peri-urban zones. This development pattern may provide extra housing supply but create long-terms issues like longer traveling distances to work, living affordability and environmental sustainability. The contradiction of living close to agricultural areas but having difficulty in local food access has raised opportunities for an alternative model of contemporary food production, distribution and consumption. The first case study in Cranbourne North shows existing market garden surrounded by new residential developments and existing industrial zones. Intervening into the edge between these programs has created better local food access. The second case study in the town centre of Clyde has shown the opportunity to redefine the settlement of Clyde center and preserving a large market garden area around the town centre as an agricultural hub to provide food for the local community. It also benefits future residential development. The housing area taken away by the preservation of the market garden will be compensated by increasing the density around the edges of the agricultural hub. The strategies of time phasing, edge intervention, hybridization, integrated and network intervention, have been taken to develop the project. The research in Melbourne has developed further the outcomes of Hanoi and Marysville projects.

Drawing shows the aerial perspective view of the intervention with a hybrid of activities to increase local food access