ALTERNATIVE, SINGLE FAMILY HOUSING, MULTI-FAMILY HOUSING AND MIXED-USE HOUSING FOR RICHMOND CITY, SUBURBS

by

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B.A., The University of British Columbia, 1992

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School of Architecture

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April 1998

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The University of British Columbia
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Date April 24, 1998

ABSTRACT

The objective of this project is to propose the addition of a new layer of housing in the typical Post WW II suburban residential context in order to provide more housing alternatives for today's diverse population. This project was also an exploration of ways that this new housing could address the transition of zones from residential to other uses such as commercial, industrial and agricultural. I chose Richmond as my prototype site for exploration because I believe it is typical of many suburban communities throughout North America.

The image in North America of the traditional family of a married couple with young children with an employed husband and homemaker wife that characterized the 1950's and 1960's doesn't match today's demographics. Today other types of family structures account for nearly 79% of the households created, the fastest-growing household type is the single person living alone, which comprise 23% of all households and single-parent families account for 14% (Canada Census Statistics 1991 and projections).

As household composition becomes more diverse I believe architects must develop new forms to accommodate these changes. The residential landscape we inhabit today is largely the result of Post WW II prosperity and values. In the 1950's the single-family house became the standard and bankers, builders and developers continue to concentrate the bulk of capital resources of housing on the model of the single family detached house despite the demographic shifts to new types of households. Today many individuals and families are experiencing difficulties in finding housing that meets their particular needs.

The design solutions for the nineties will not work unless they challenge gender stereotypes glorified in the Post WW II pattern of development. This pattern of development implemented rigid zoning that separated activities of public life such as places of wage work from the activities of home life. Private life and public life, private space and public space are bound together despite cultural pressures to separate them, I believe even more so today more with emergence of the home office. In this project I explored ways to create more flexible forms of housing and much richer and complex sets of transitional spaces in order to accommodate the activities that are required to connect private life and public life effectively for today's population.

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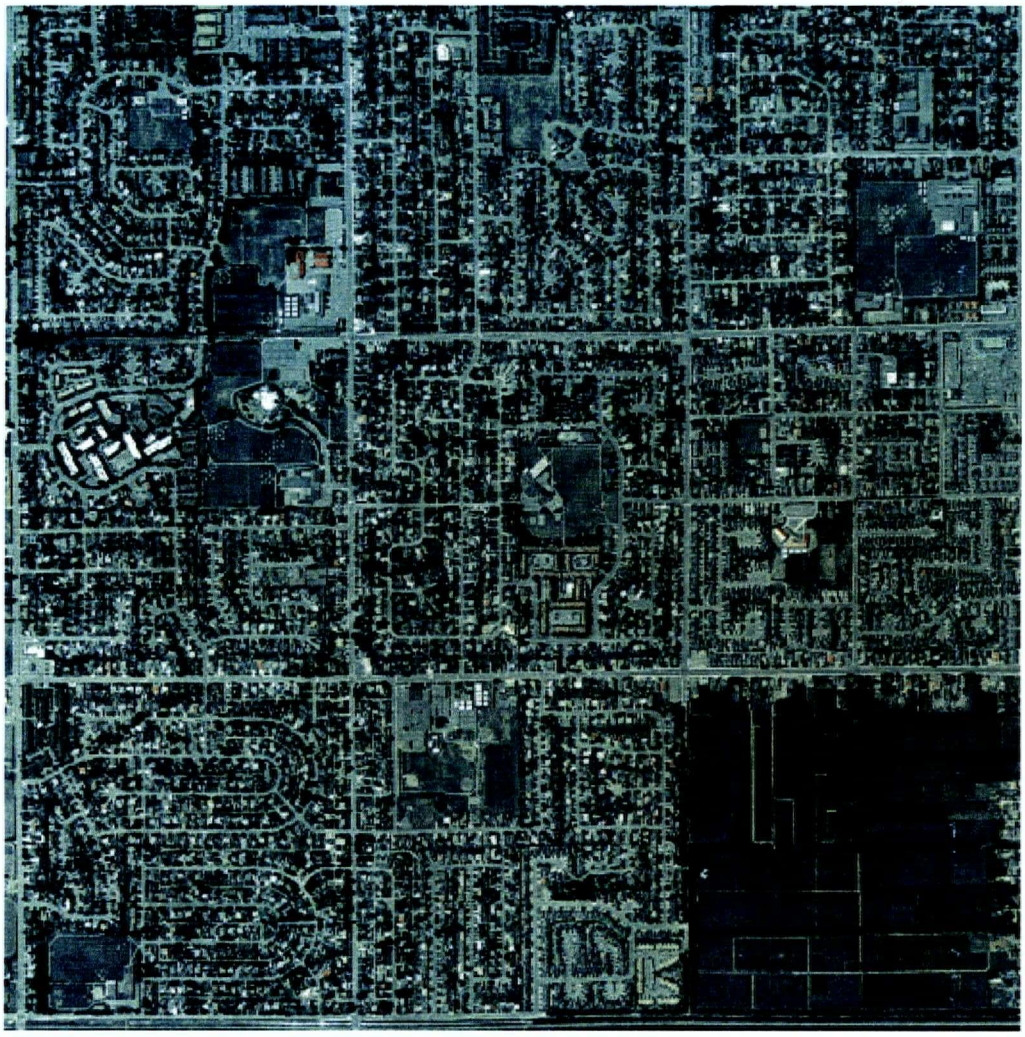
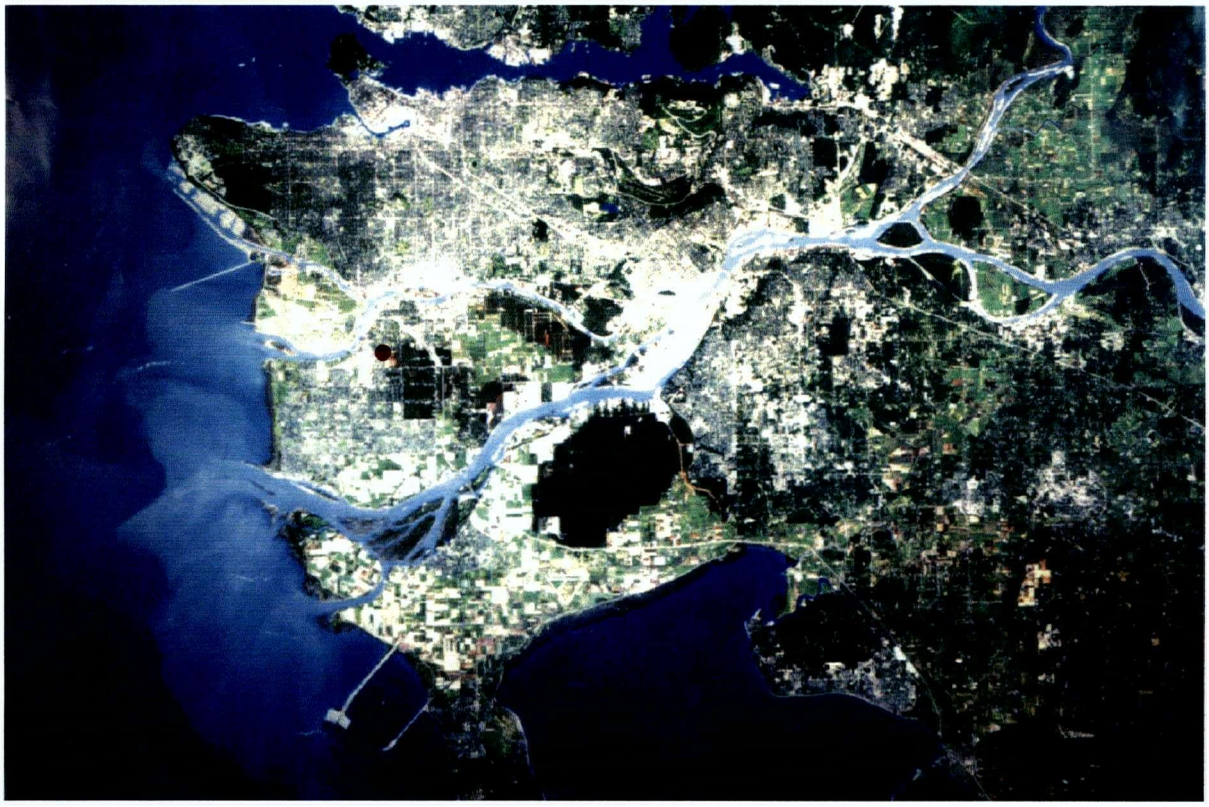
The Urban Quilt



The beauty of the urban quilt depends on the contrast of its pattern and the quality of it's fabric



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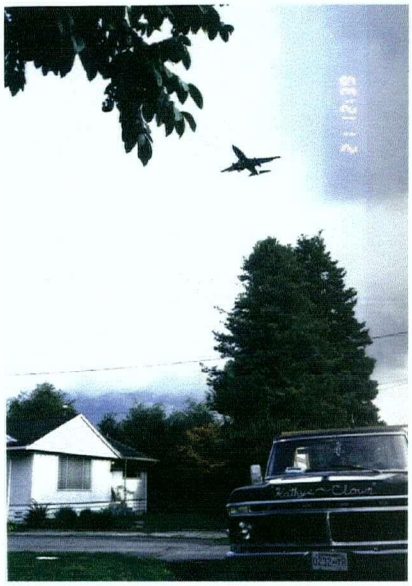
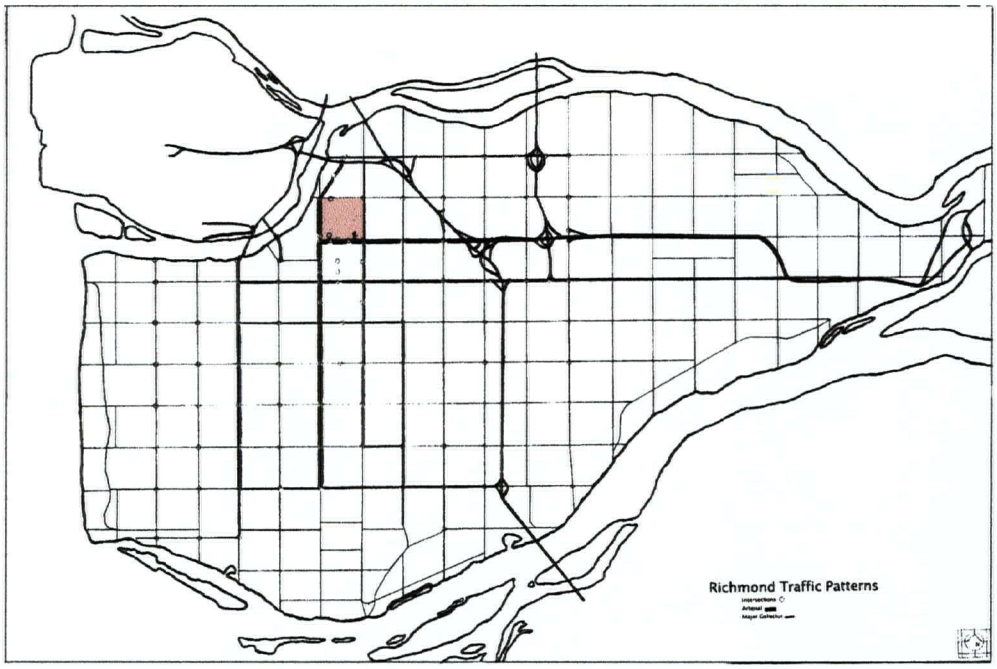
The Site:

The Lower Mainland of British Columbia as seen from Space. The City of Vancouver occupies the peninsula in the upper left and beyond. Richmond the island is in the center bordered by the north and south arms of the Fraser River. The site indicated by the red dot is located in the more urbanized area of Richmond compared to the less populated agricultural area to the east. Do to rapid population growth there is increasing pressure to expand housing into these agricultural lands. In this proposal I suggest a way of densifying the existing urban/suburban areas in order to avoid using valuable farm land for housing.

Images of Richmond

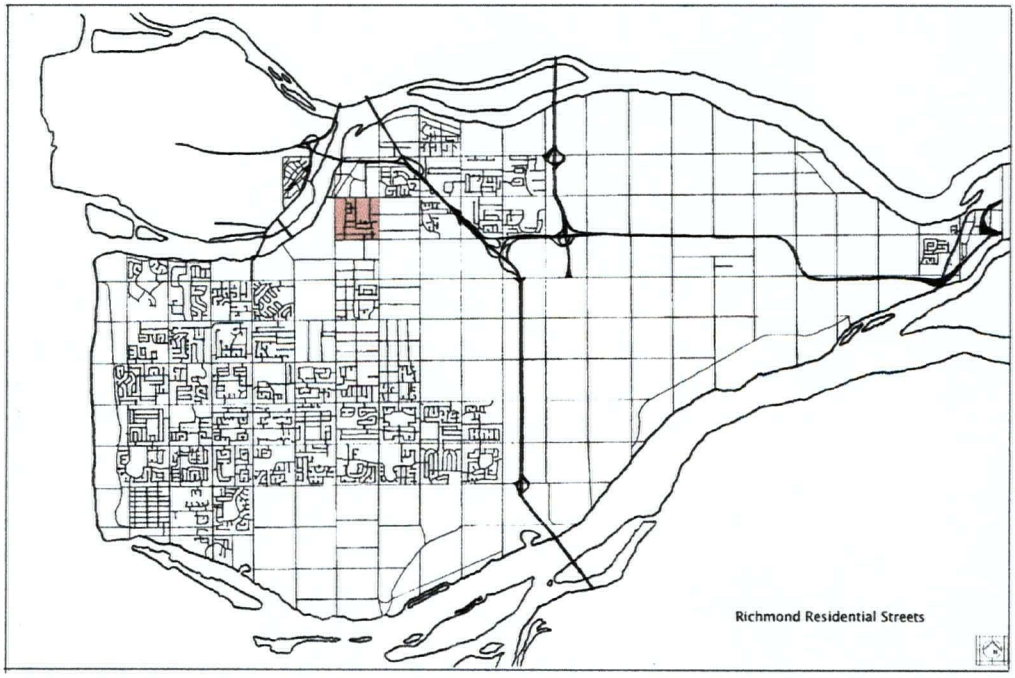




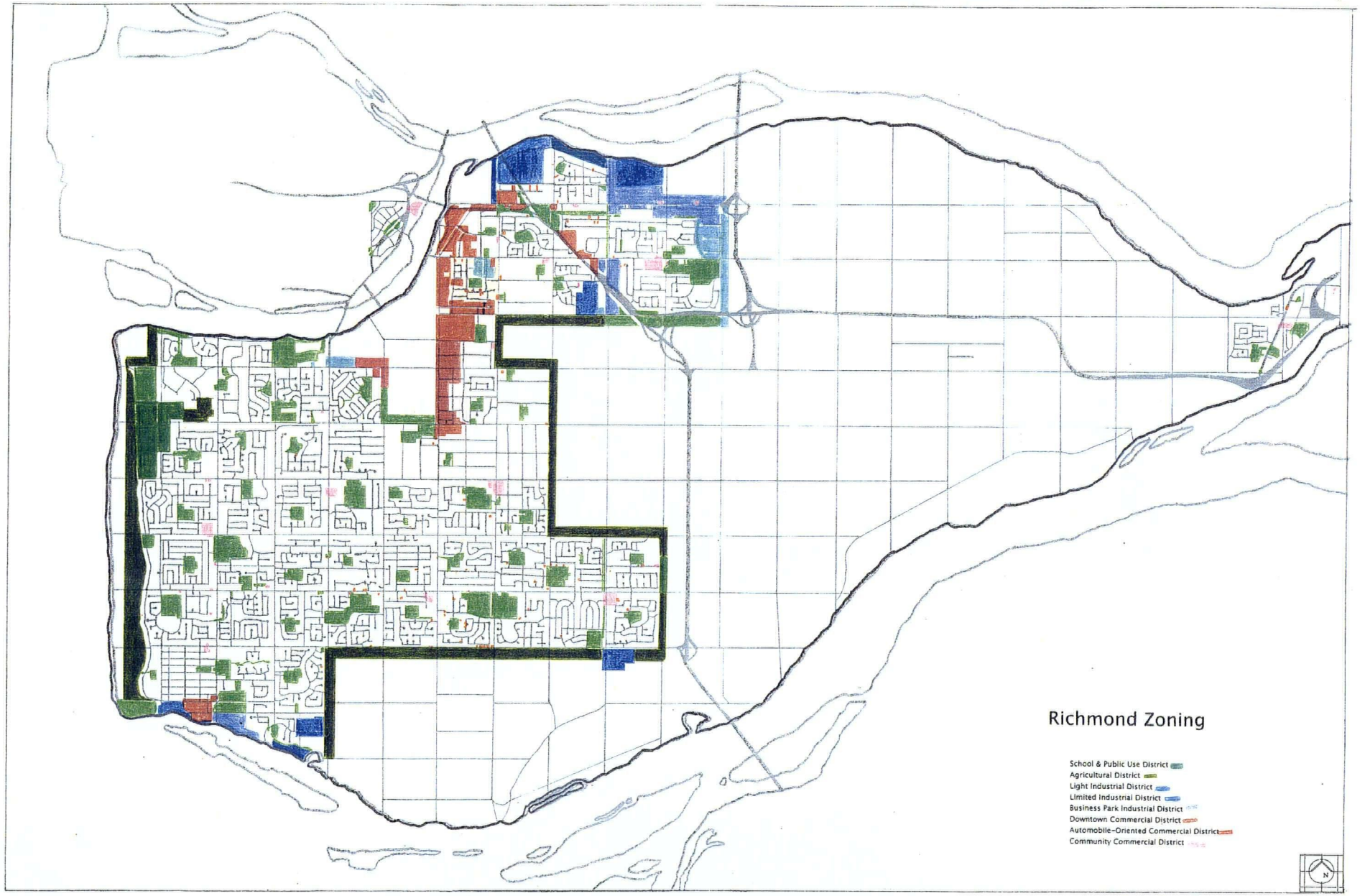
Richmond Traffic Patterns

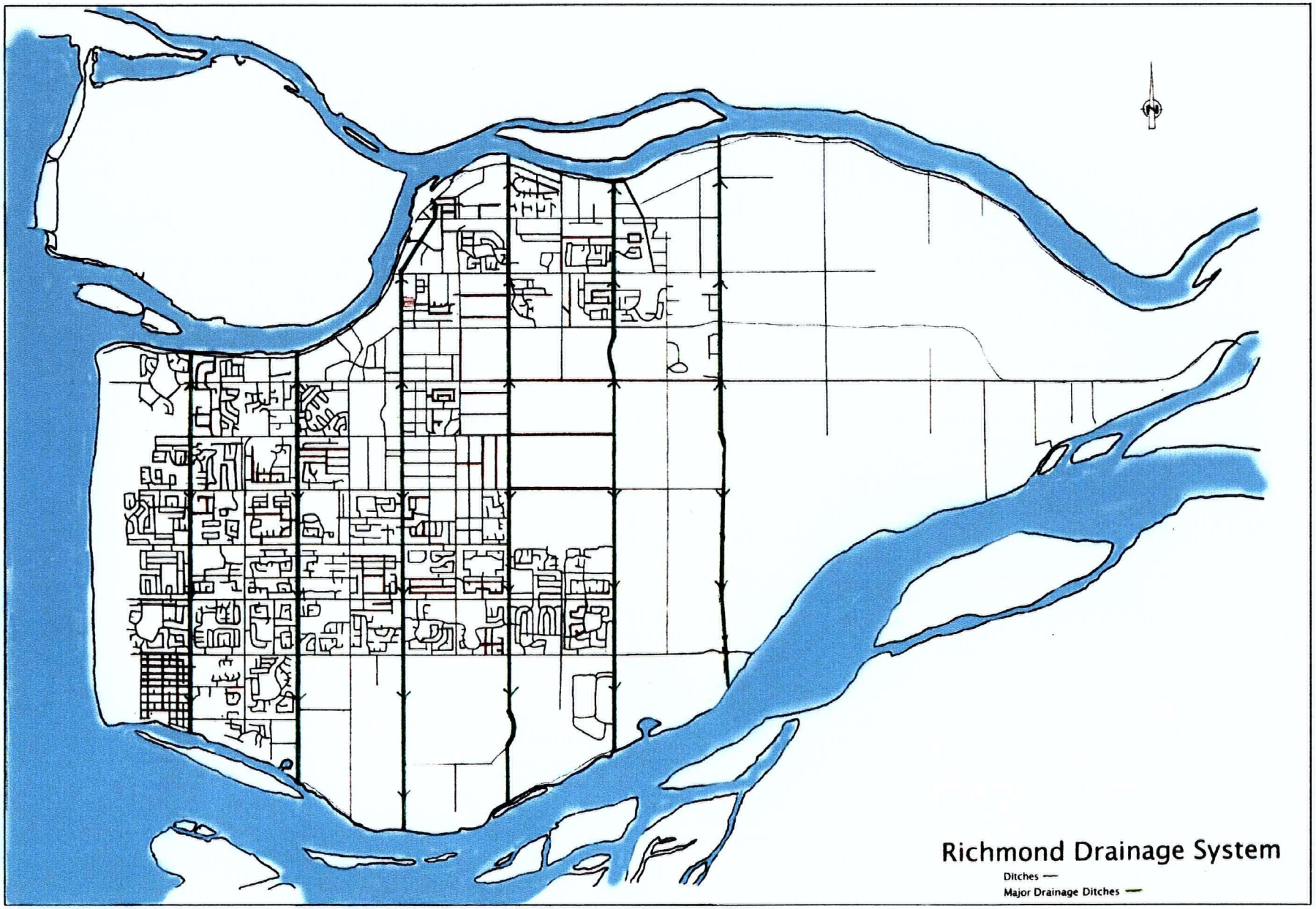
left:

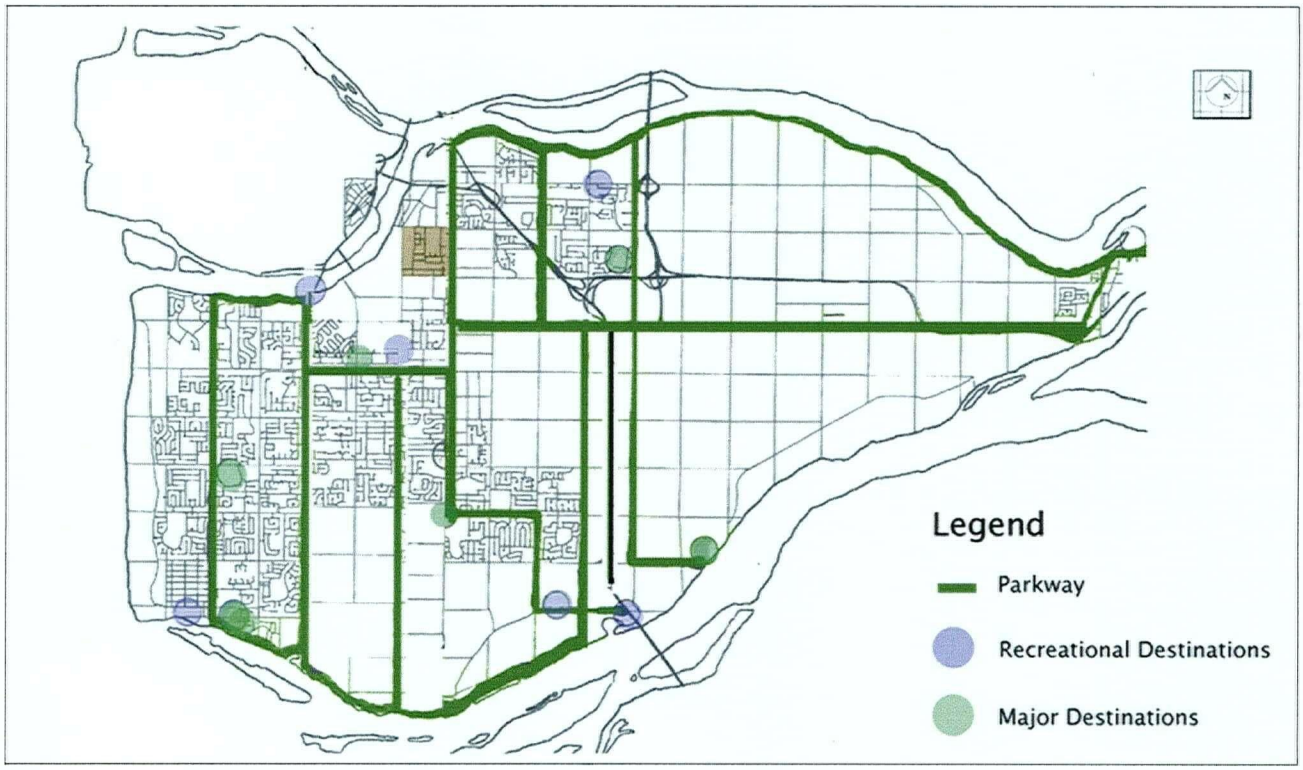
My project began with the mapping of Richmond overall. On this page and the next few pages I mapped out the traffic patterns, residential street patterns, zoning and drainage system. A clear picture emerged from this exploration. Richmond is characterized by having large blocks as a result of it's agrarian roots. Within these blocks the street structure is fortress-like with many cul-de-sacs, making it difficult to traverse through. It is easier to traverse along the edges . Richmond is also characterized by rigid zoning, with residential, commercial, industrial uses clearly separated. Lastly Richmond's landscape is very flat bordered by the north and south arms of the Fraser River. In order to drain stormwater run off there is an extensive ditch system with major drainage ditches along the major arterial roads with pump-houses on the north and south to pump the water out into the river.



Richmond Residential Streets

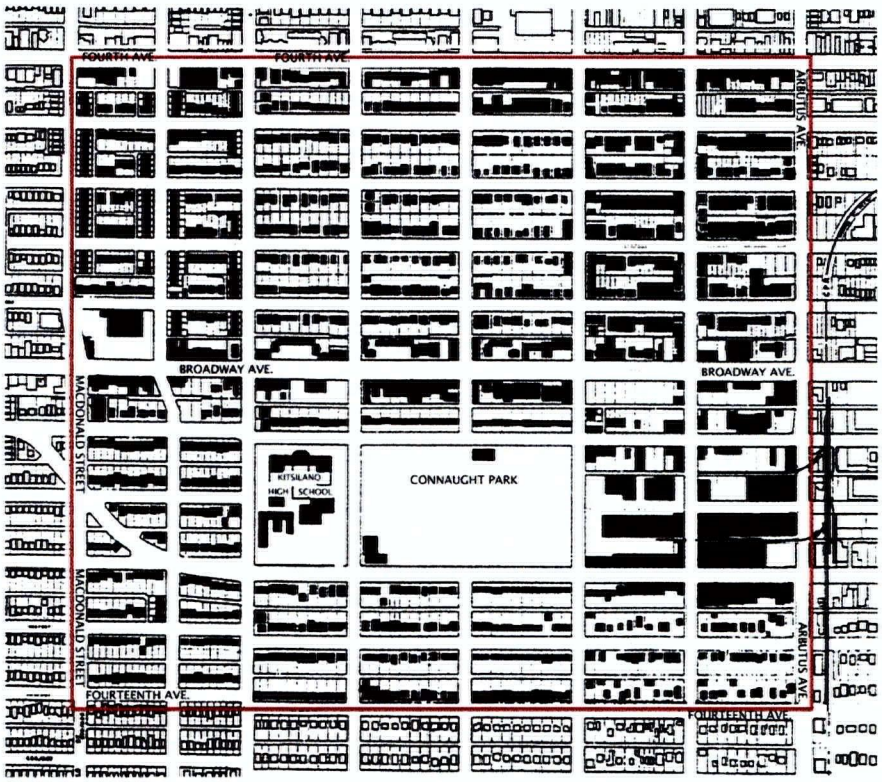

Richmond Zoning
School & Public Use District
Agricultural District
Light Industrial District
Limited Industrial District
Business Park Industrial District
Downtown Commercial District
Automobile-Oriented Commercial District
Community Commercial District


Richmond Drainage System
Ditches
Major Drainage Ditches



above:

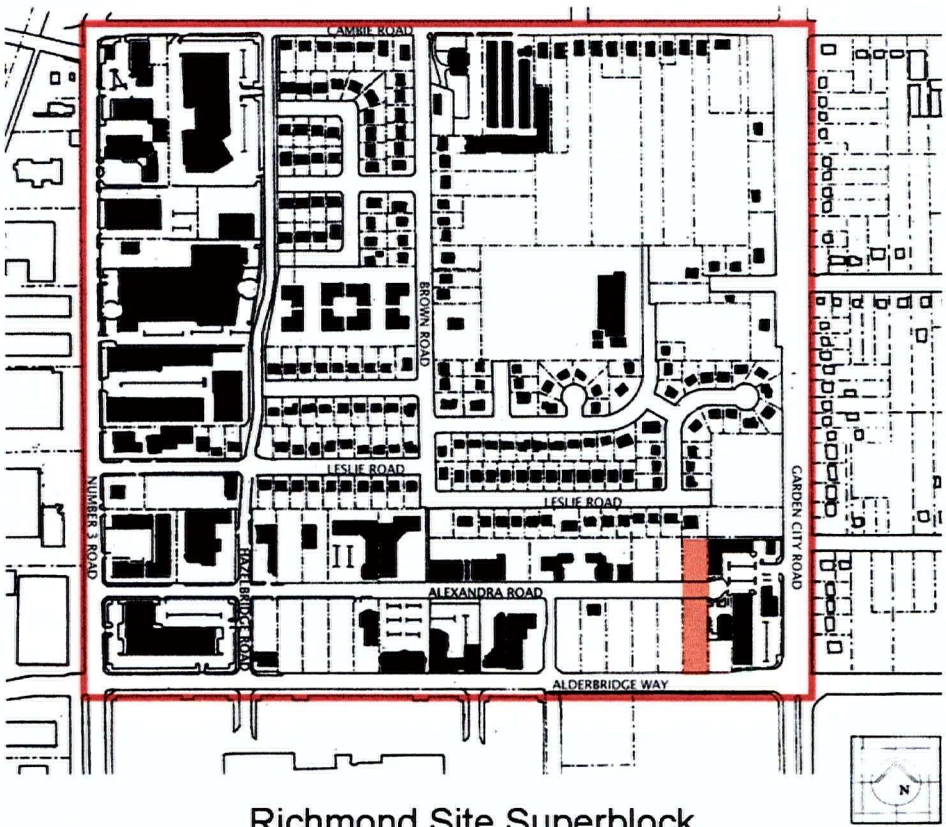
After a thorough investigation of Richmonds attributes I proposed the possibility of a Water Parkway. The Water parkway would utilize the existing drainage system in Richmond.The Parkway would also serve as a corridor to allow movement by bicycle, walking or automobile to the various neighbourhoods, destinations and to the dykes along the Fraser River.



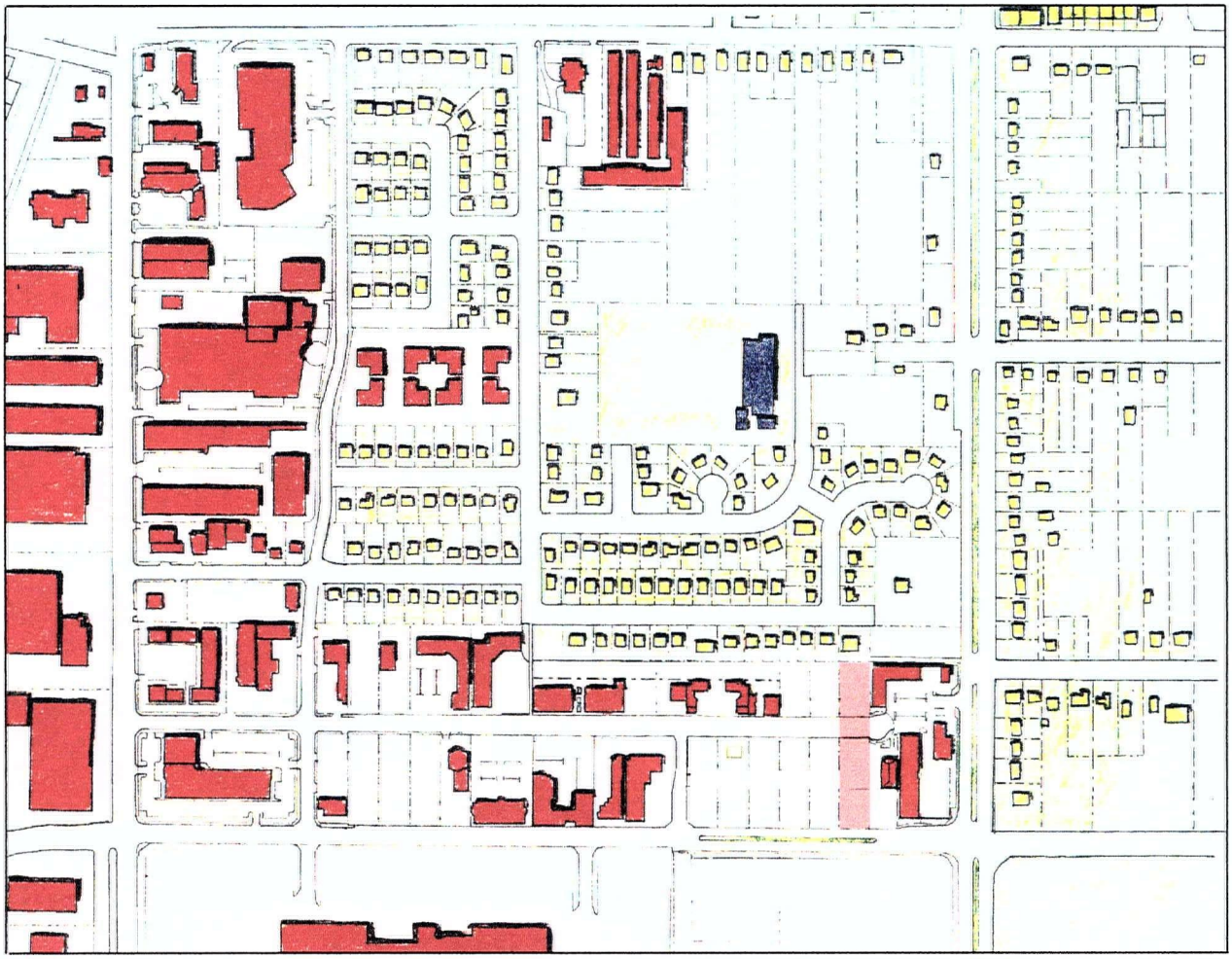
Vancouver Kitsilano Block

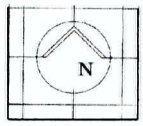
left:

In the process of mapping Richmond I thought it would be informative to make a comparison to a typical Vancouver block. The Vancouver block has a grid street pattern compared to the fortress-like street pattern of the Richmond block. In fact two Vancouver blocks fit inside one Richmond block.



Richmond Site Superblock



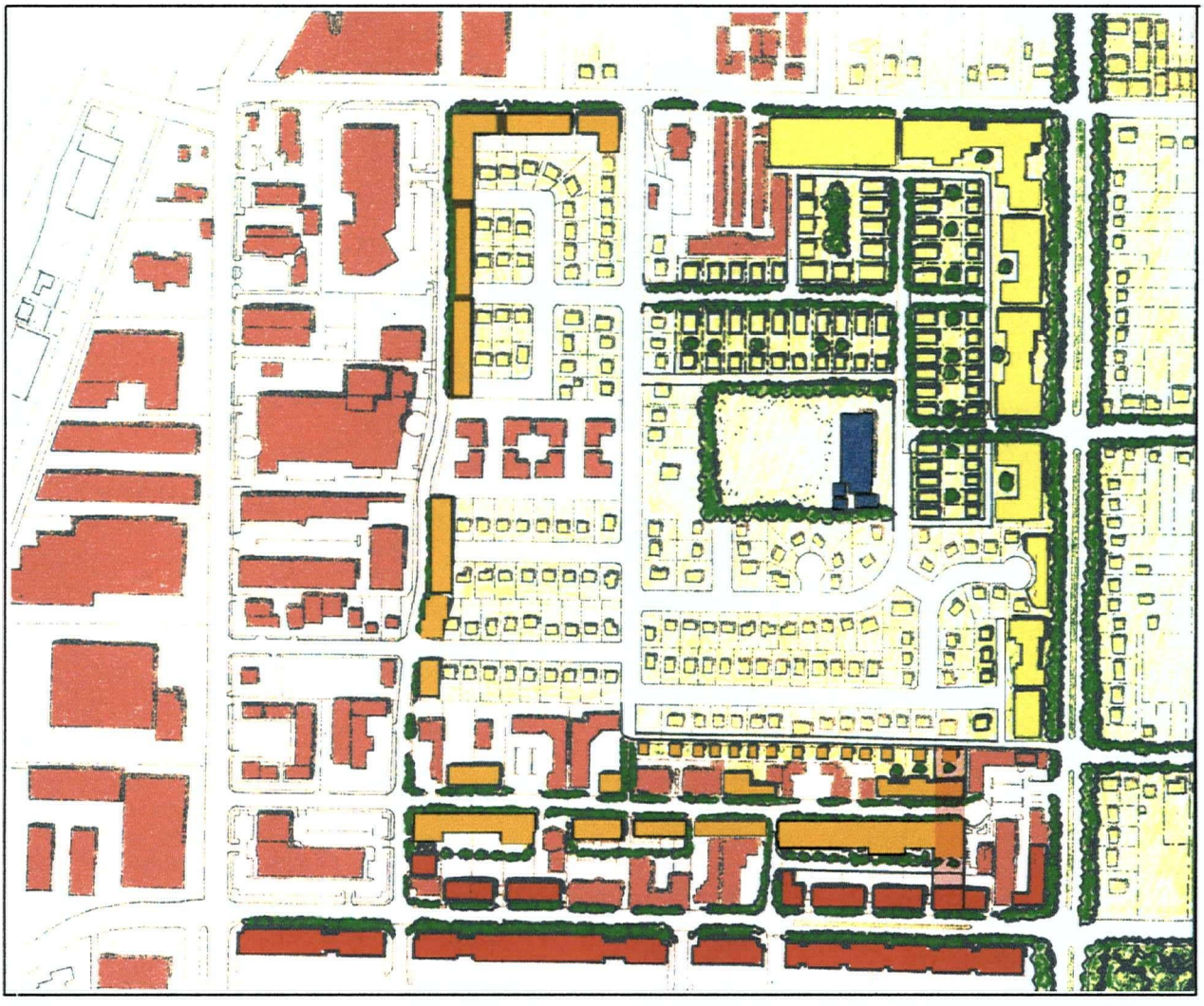


Legend

- Residential
- Commercial
- Schools/Institutional

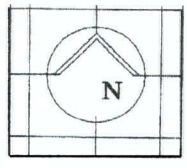
above:

The site block is typical of Richmond neighbourhood blocks. The block is strictly zoned to separate commercial and industrial from residential use. The typical block is large and with a fortress-like structure; making it difficult to traverse through by car and by foot. There are not a variety of housing options because there are predominantly single family homes.



Legend

- Residential
- Multiple Residential
- Mixed Use
- Commercial
- Institutional



above:

This is the proposed block after studying the conditions of the present block illustrated on the previous page. The proposed block has a denser neighbourhood with more varieties of housing. Mixed use and multiple residential are along the edges with commercial on the heavy traffic routes. The block has been broken up into smaller blocks to encourage more community interaction and to improve local circulation. The addition of the park-like streetscapes promote a "Garden City" image.

left and below:

I chose this site as my prototype because of it's edge condition. It is located on the edge of residential leading to commercial. It is an area that is going through a major transition. The city is planning to eventuall phase out the housing and replace them with strip mall type of development because they believe the noise from air traffic is not compatible with residential. Contrary to the city's belief there has been a community established here since the 1950's and they are very upset of the prospects of their neighbourhood being destroyed.

Photograph of Site Looking South from Alexandra Road

Photograph of Site Looking North from Alexandra Road

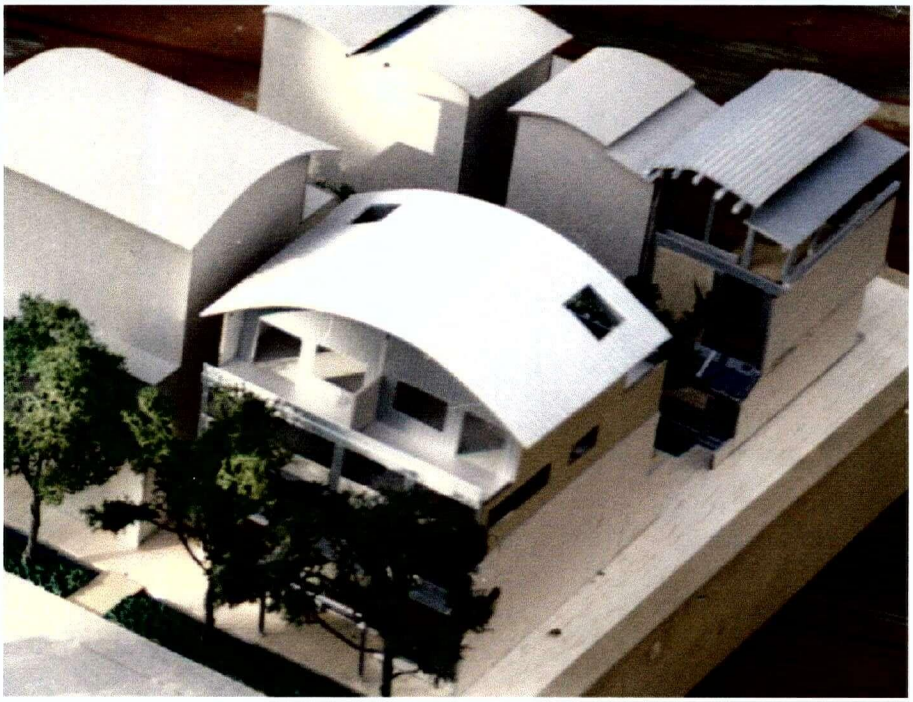
Photograph of Context Model at 1:500
red highlights the prototype strip shown in model below

Photograph of Design Model at 1:100

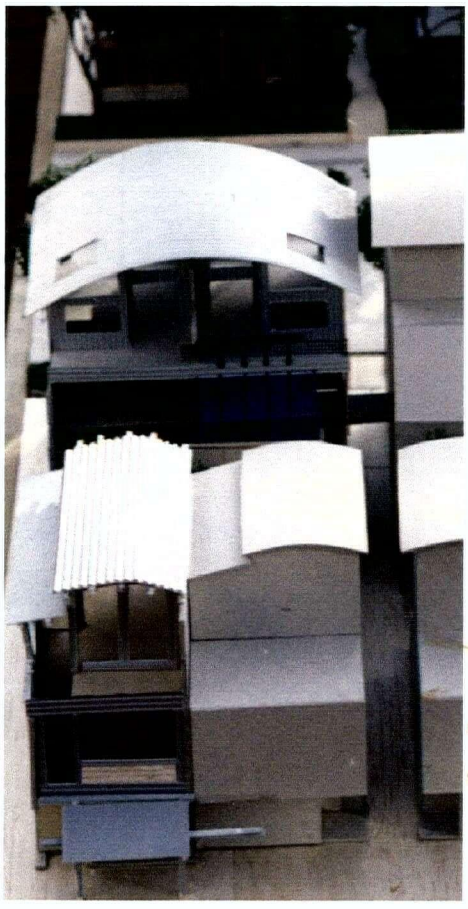
ALEXANDRA STREET

ALDERBRIDGE WAY

ALEXANDRA COURT &
ALDERBRIDGE COURT HOUSING
RICHMOND, BC
Site Plan & Section 1:250

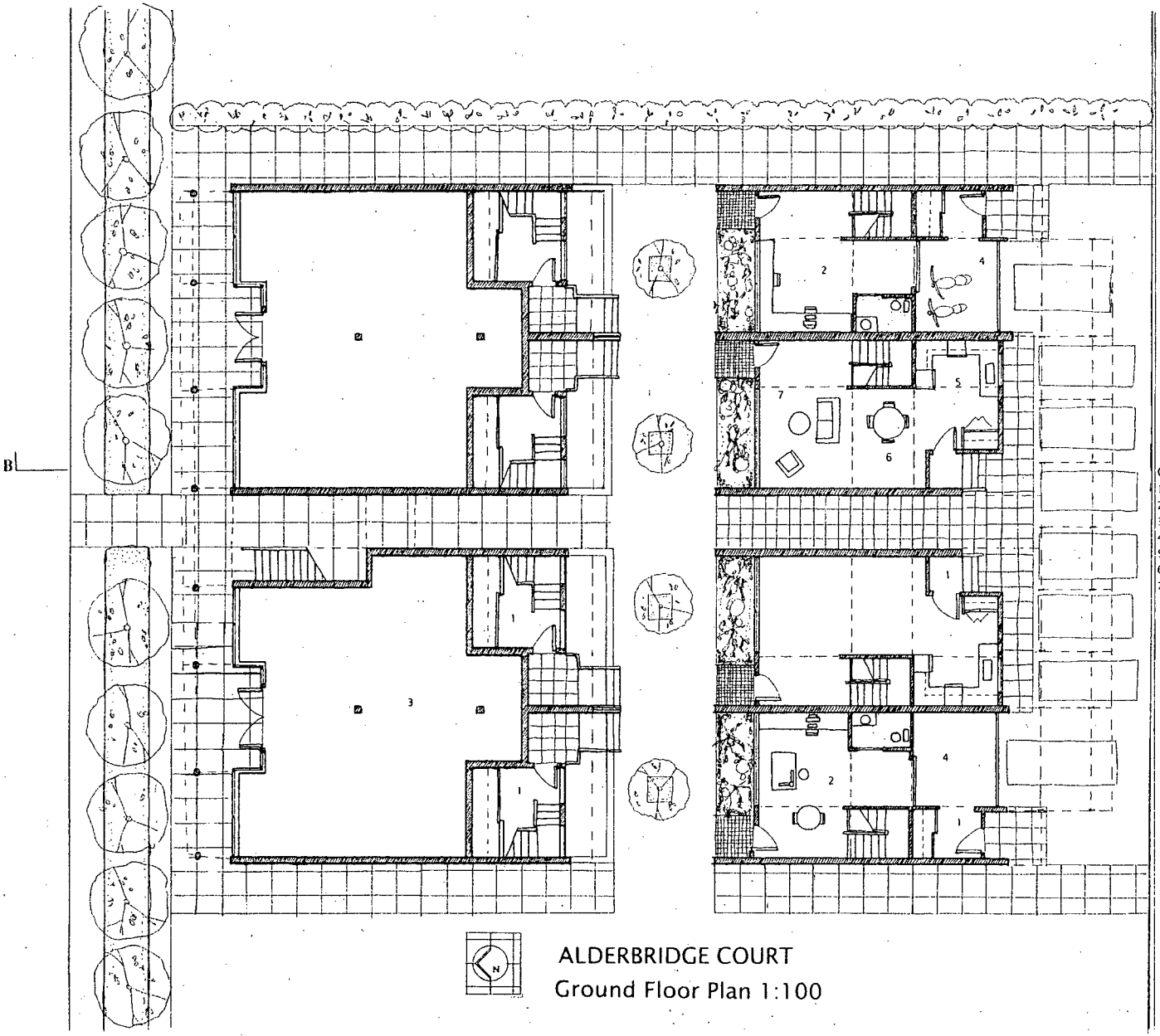


Photographs of Design Model at 1:100
Alderbridge Court Street Elevation

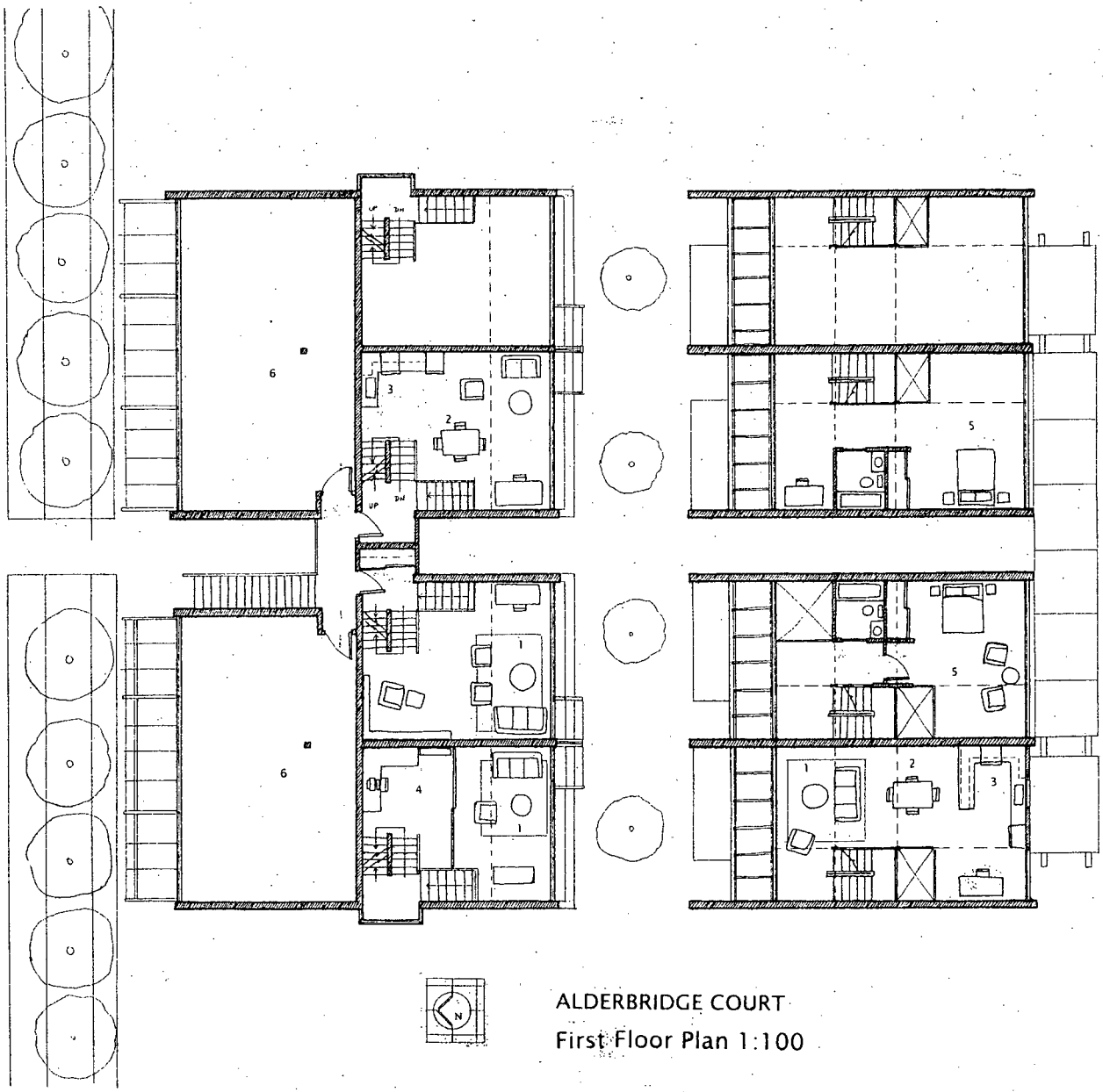


Alderbridge Court Lane Elevation

Photographs of Design Model at 1:100
Alderbridge Court Street Elevation

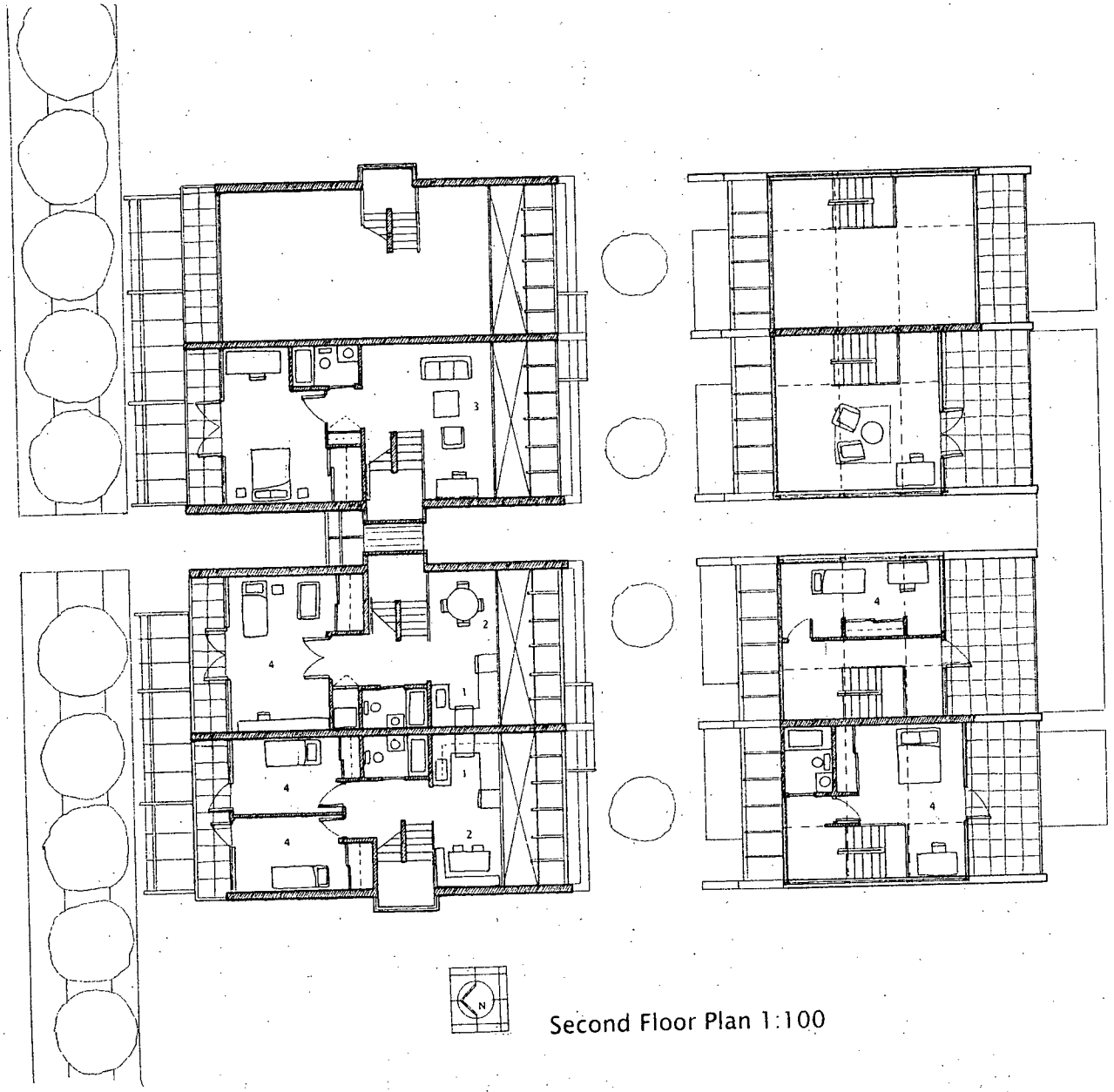


ALDERBRIDGE COURT
Ground Floor Plan 1:100



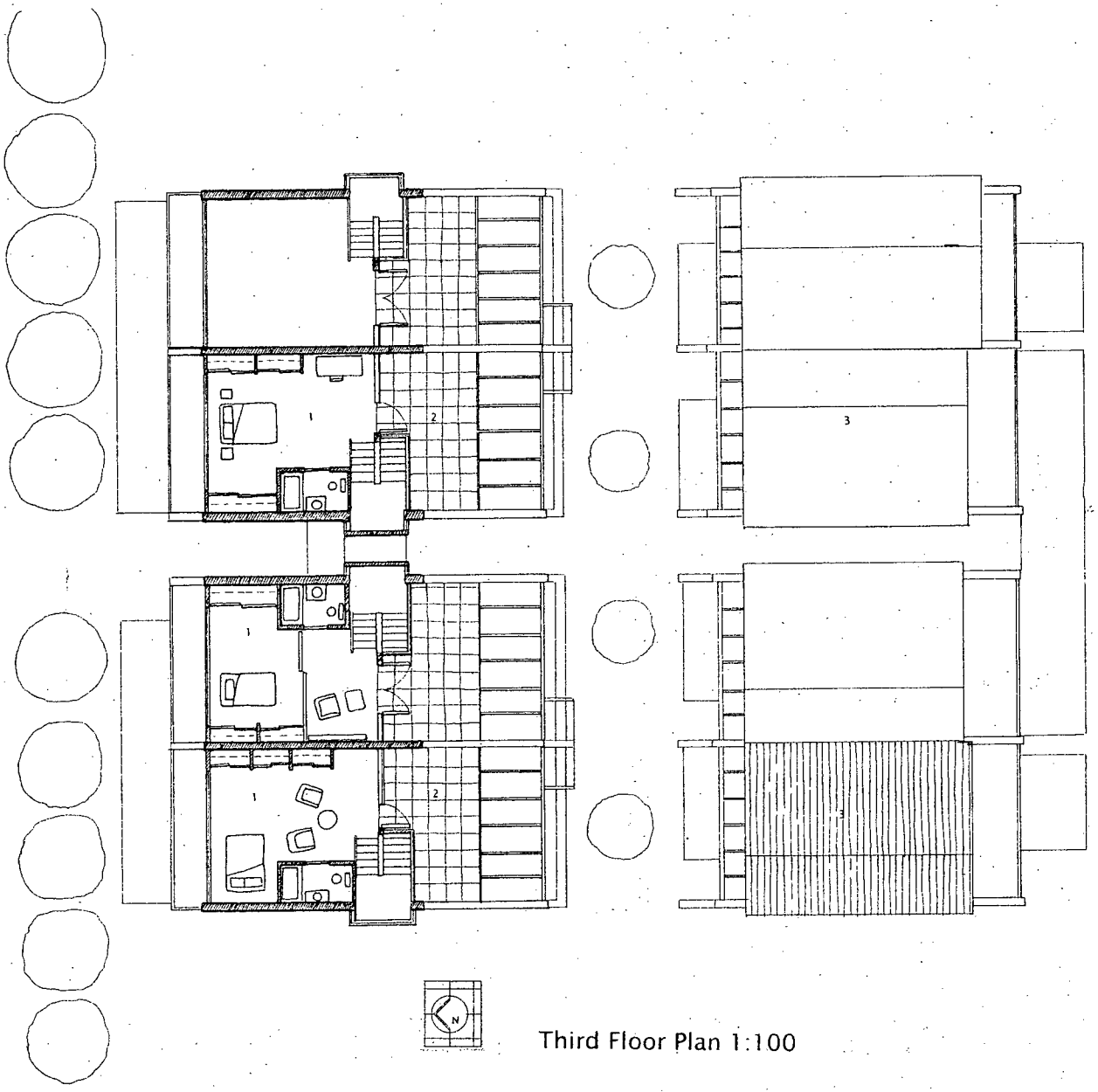
First Level
1. Living
2. Dining
3. Kitchen
4. Study/Office
5. Bedroom
6. Rented Office Space

ALDERBRIDGE COURT
First Floor Plan 1:100



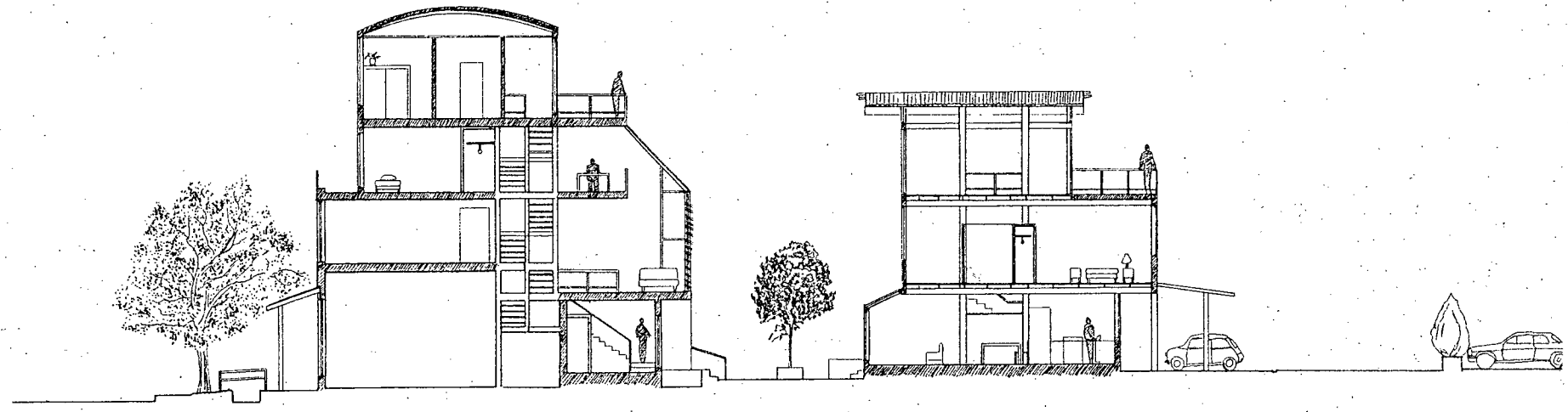
Second Level
1. Kitchen
2. Dining
3. Living
4. Bedroom
5. Deck

Second Floor Plan 1:100

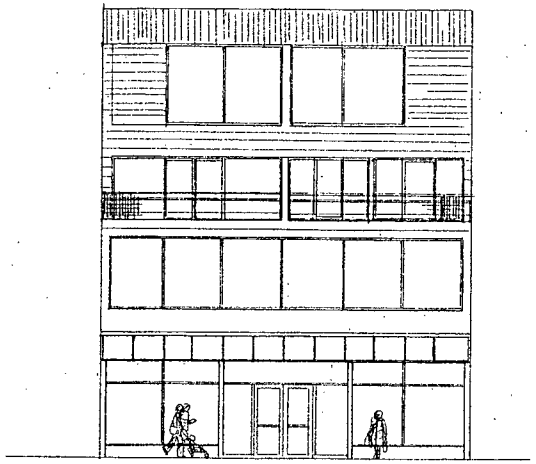


Third Level
1. Bedroom
2. Deck
3. Roof

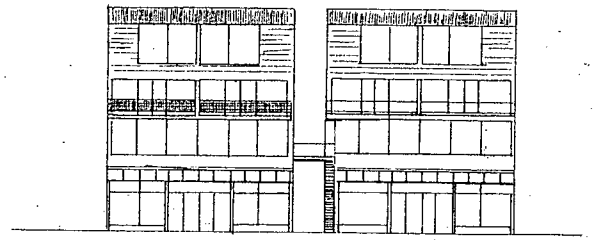
Third Floor Plan 1:100



ALDERBRIDGE COURT
Section BB 1:100



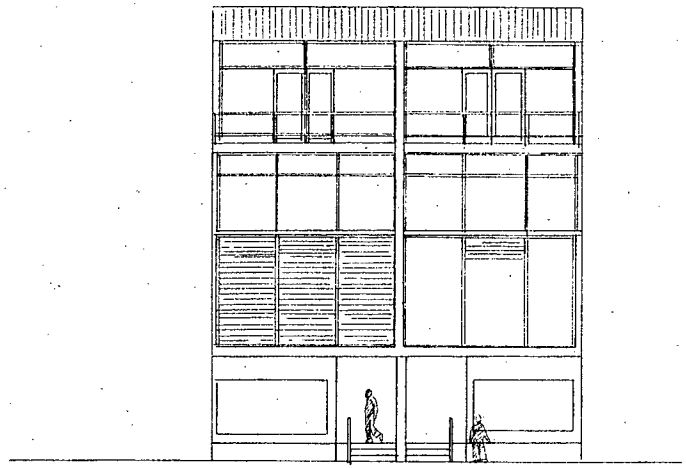
Alexandra Street Elevation 1:100



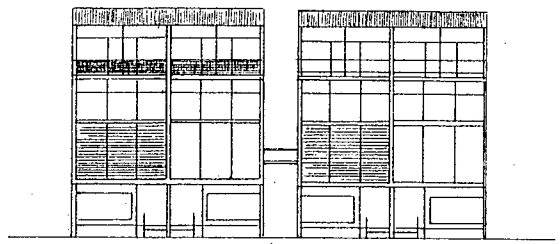
1:200

Prototype C Multiplex Residential/Commercial

These units have commercial space with office space above off Alexandra Street. The Residences are entered from the pedestrian court. These units would be ideal for single people, as each unit provides separate living spaces within each unit to allow for maximum privacy.



Court Elevation 1:100



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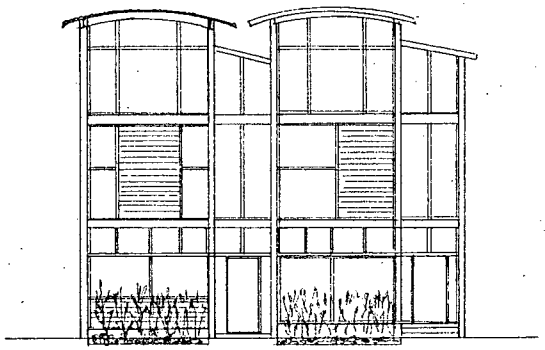
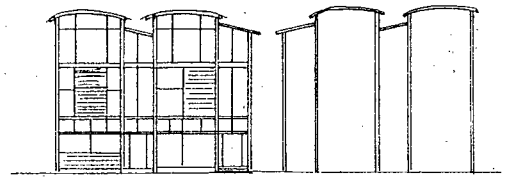


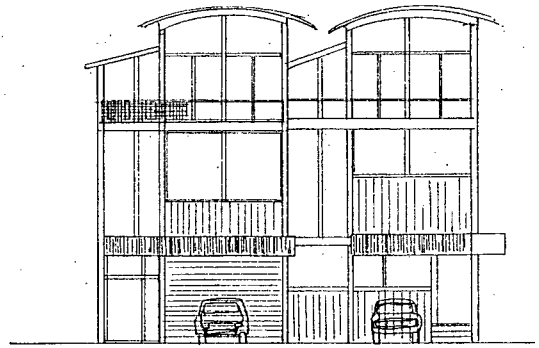
Court Elevation 1:100



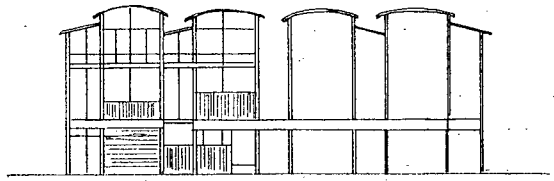
1:200

Prototype D Townhouse Mixed Use

These small units are suitable for young people looking for their first home. Located off the lane, it would allow for more industrial type work, i.e. one unit is using their studio grade area for a motorcycle repair shop.



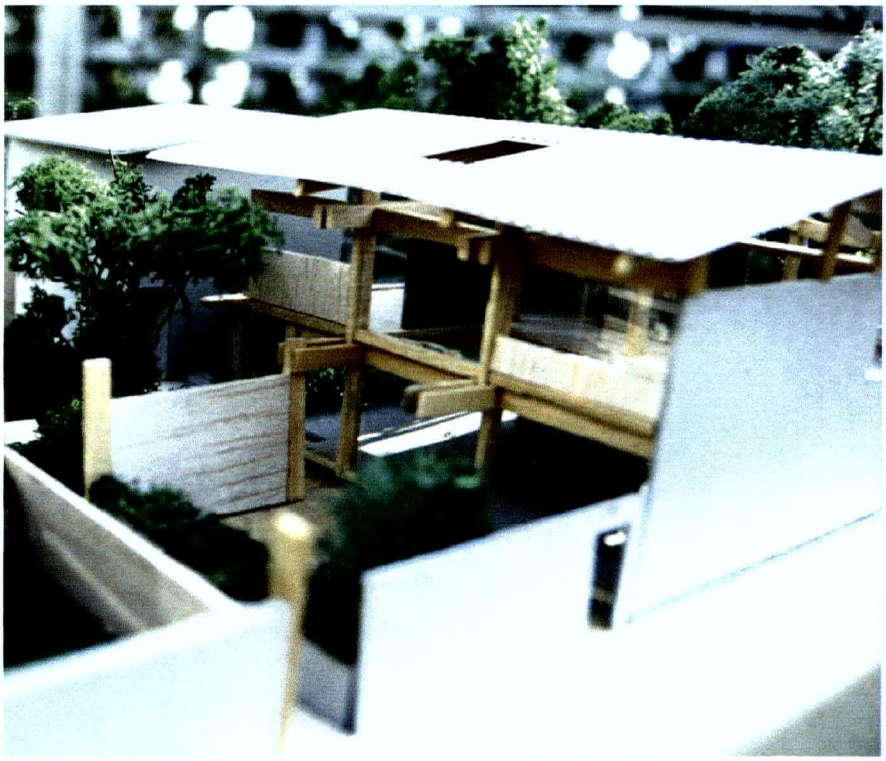
Lane Elevation 1:100



1:200

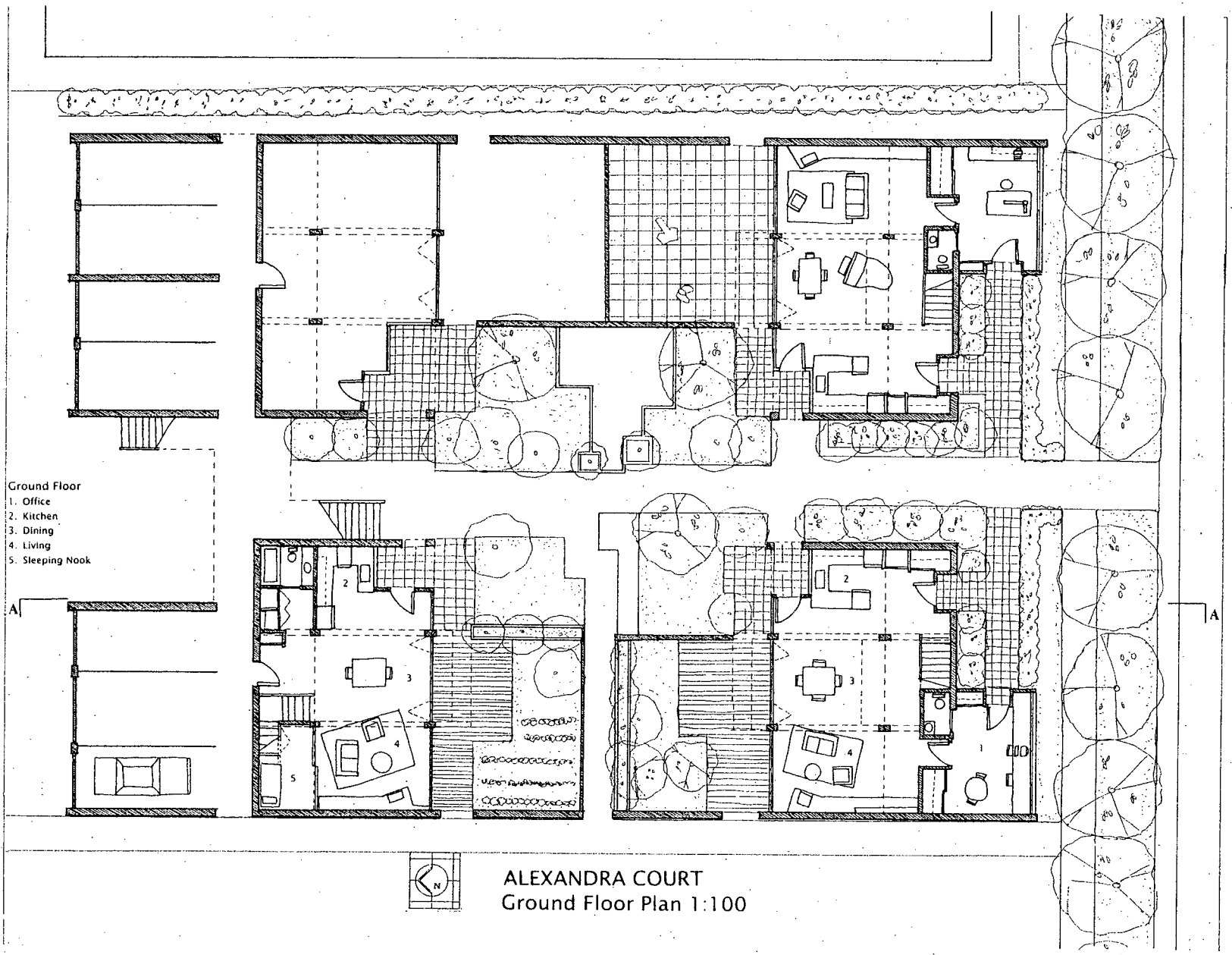
Photograph of Design Model at 1:100
Showing Alexandra Court Street Elevation

Alexandra Court Lane Elevation

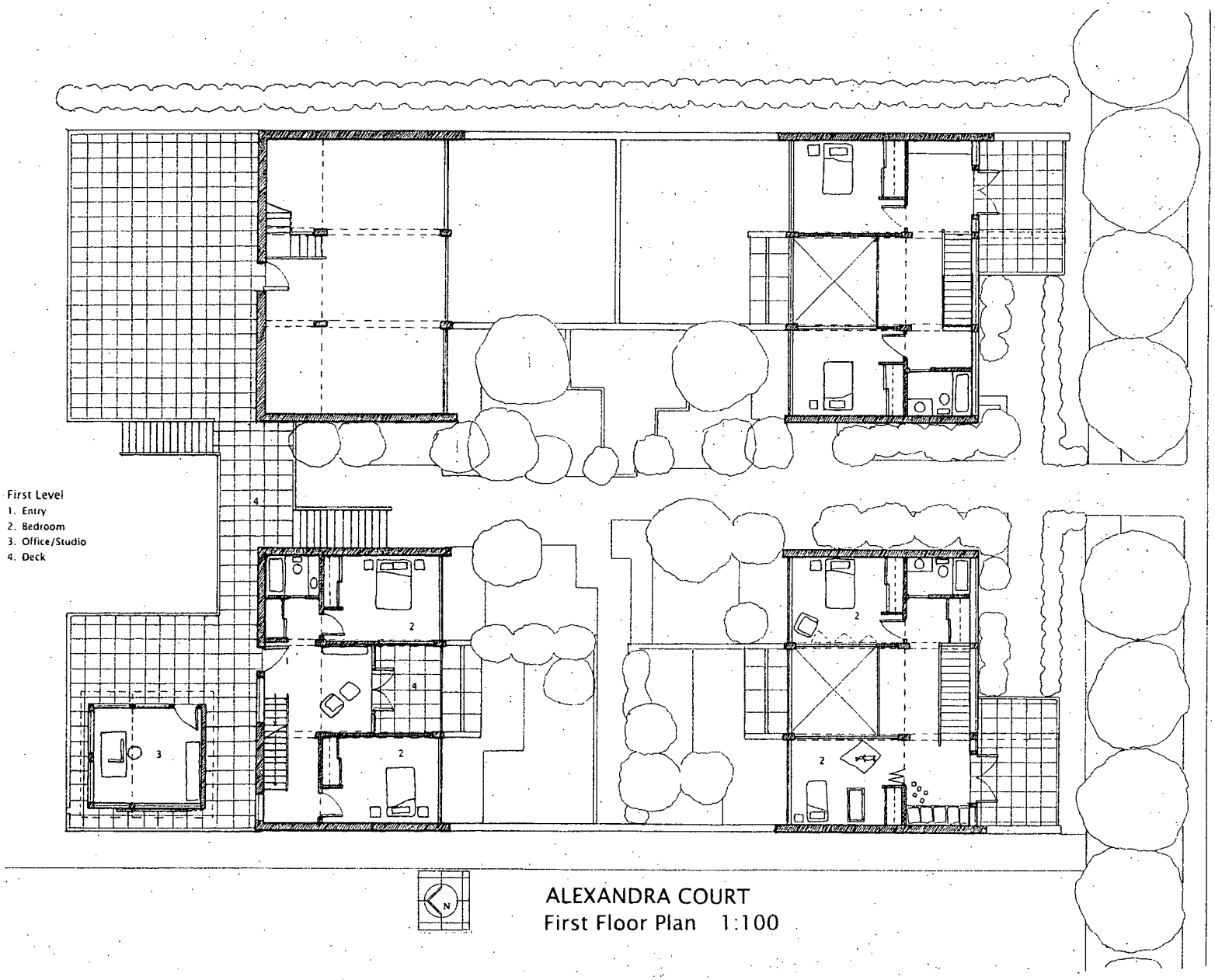


Photograph of Design Model at 1:100
Alexandra Court Garden Elevation

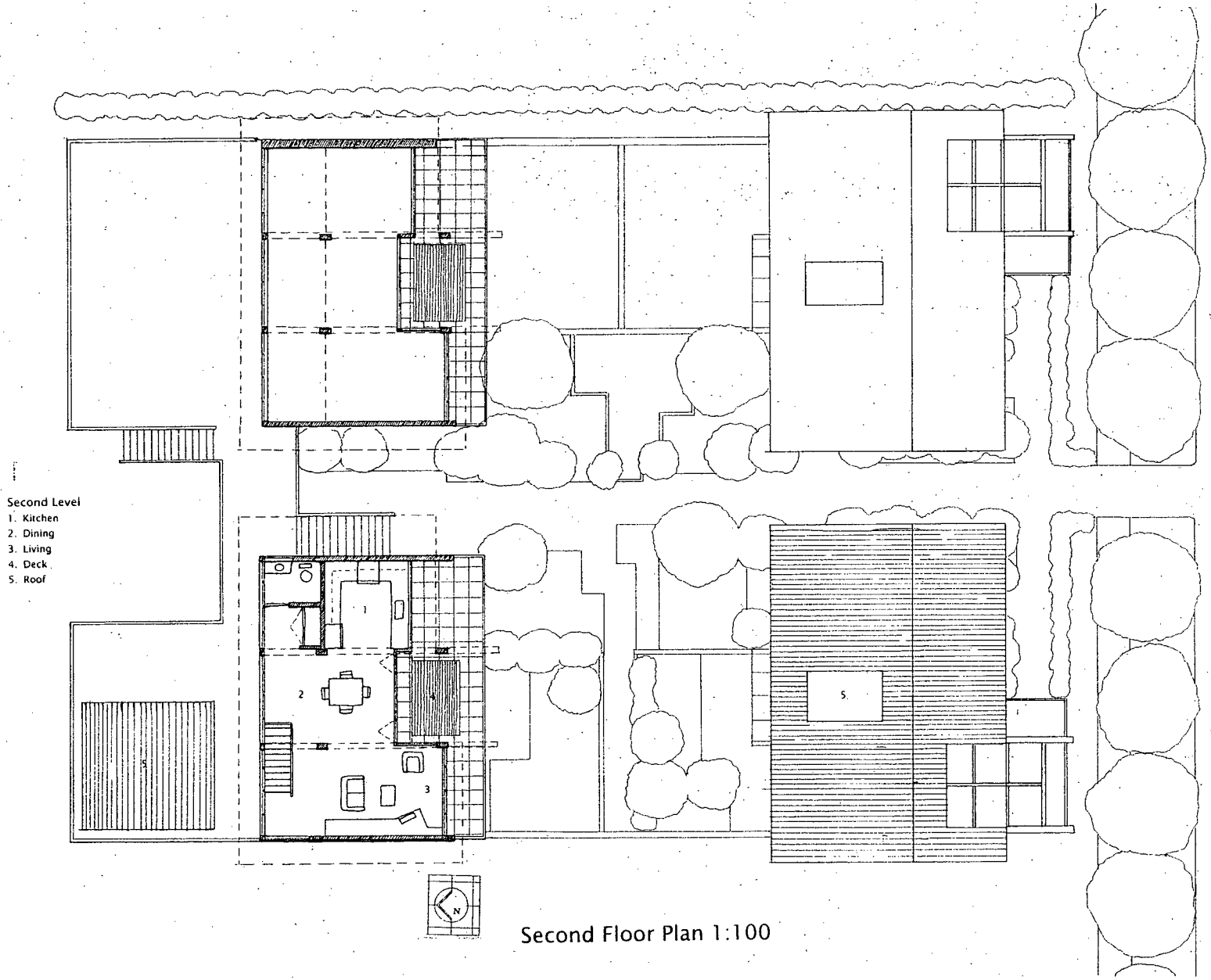
Alexandra Court Garden



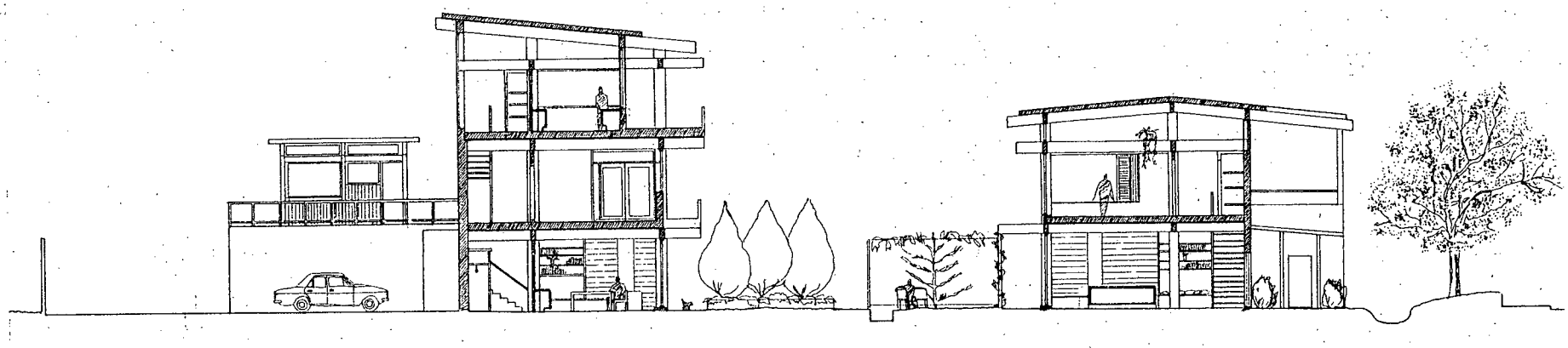
ALEXANDRA COURT
Ground Floor Plan 1:100



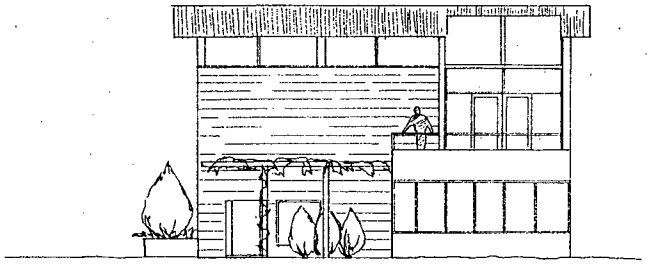
ALEXANDRA COURT
First Floor Plan 1:100



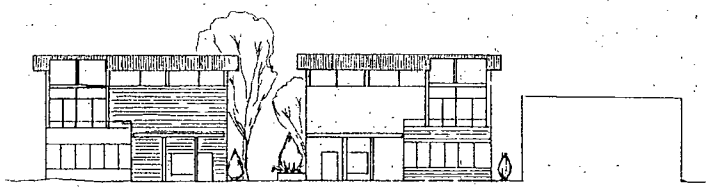
Second Floor Plan 1:100



ALEXANDRA COURT
SECTION AA
SCALE 1:100



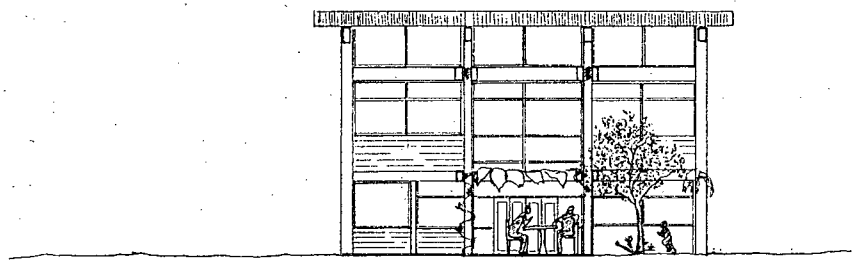
Alexander Street Elevation 1:100



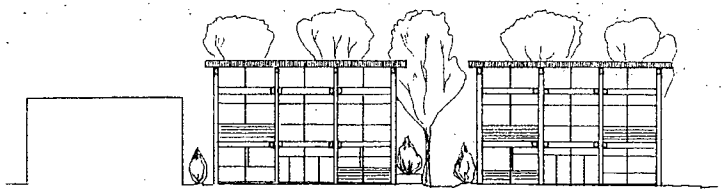
1:200

Prototype B Detached Residence/Office

These units are ideal for the single parent family. Shutters and removable partitions provide degrees of flexibility, privacy and communication. The unit also serves as a setting for the adult's work with office space located off Alexandra Street.



Court Elevation 1:100



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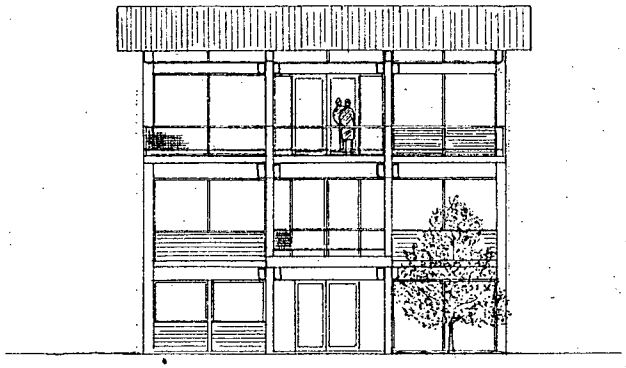
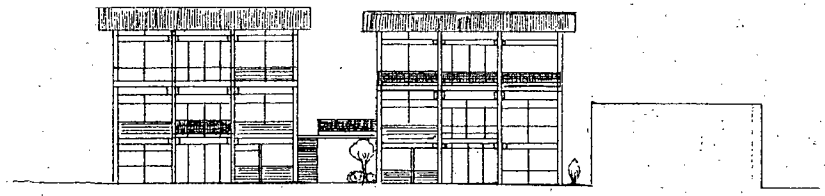


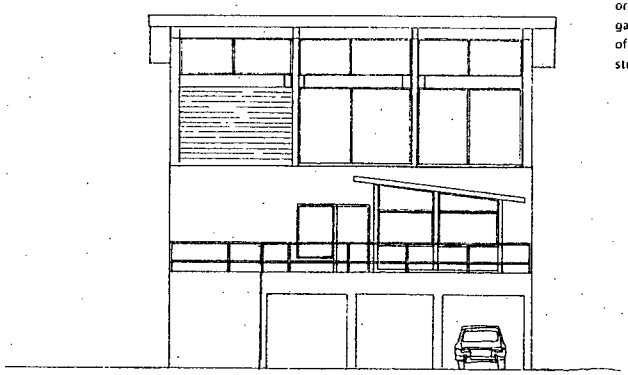
North Court Elevation 1:100



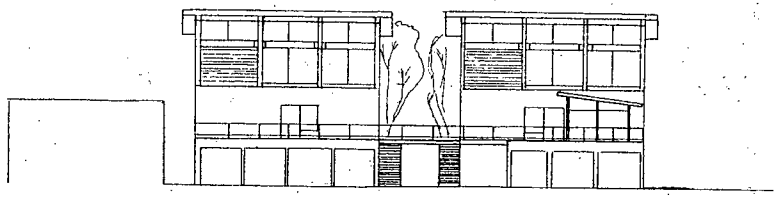
1:200

Prototype A Detached Two Family Residence

These units have ground floor suites that are suitable for extended families; for rental or conversion into office space. The ample garage roof patios allow for expansion of living space, i.e. one unit has built a studio on top of one of the garages.



Lane Elevation 1:100



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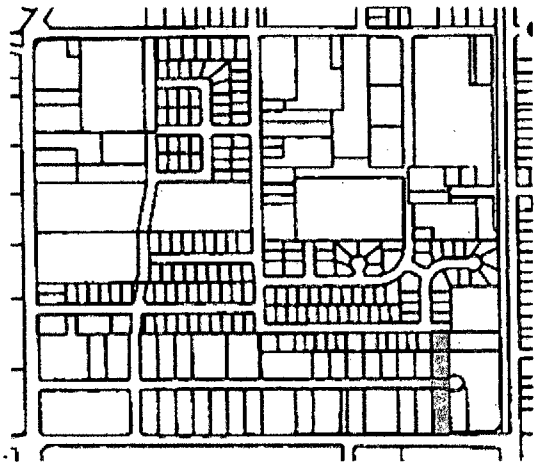
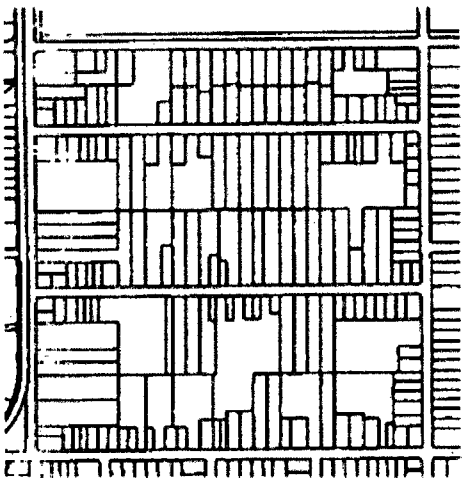
Patterns of Residential Inhabitation



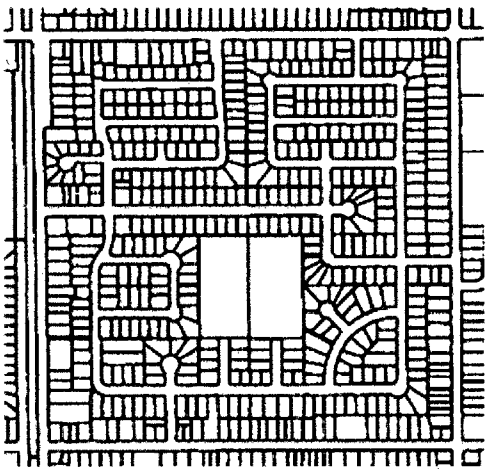
Site Superblock

left and below:

The last step of my project was to apply my prototype model to different conditions in Richmond. I identified three distinct patternsthat exist in Richmond blocks. I identifiedthese blocks according to their pattern.The "linear" block consists of long thin lots, with a few straight streets cutting through. The "fortress" block consistsof small lots with a very circuitous street pattern. Lastly the "site superblock" the block in which I developed my prototype, is a combination of the fore mentioned block patterns.The next few pages illustrate how I applied the prototype model to these different conditions.

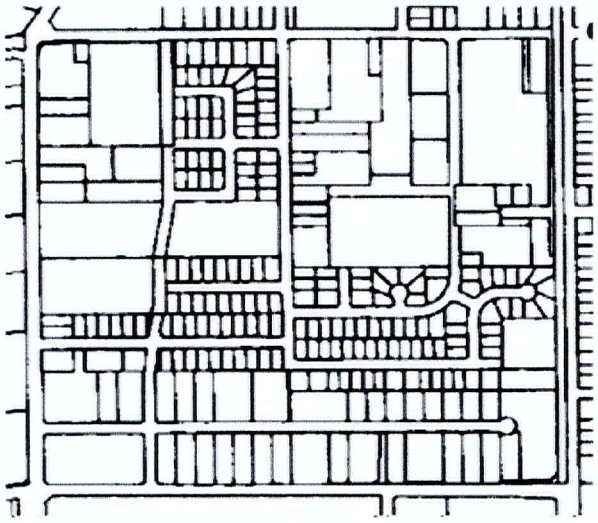


Linear

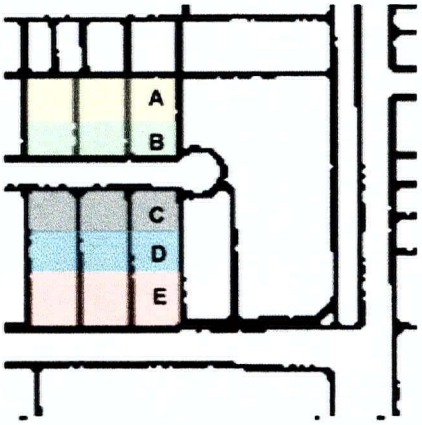


Fortress

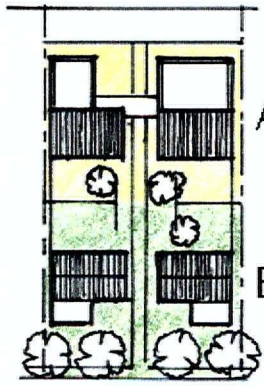
Site Block Model



Superblock

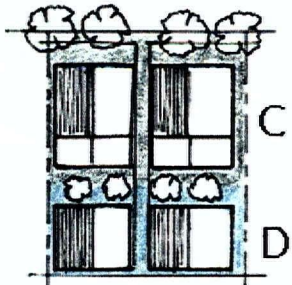


Block



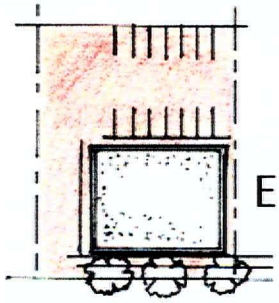
A Detached 2 Family Residence

B Detached Residence/Office



C Multiplex Residential/Commercial

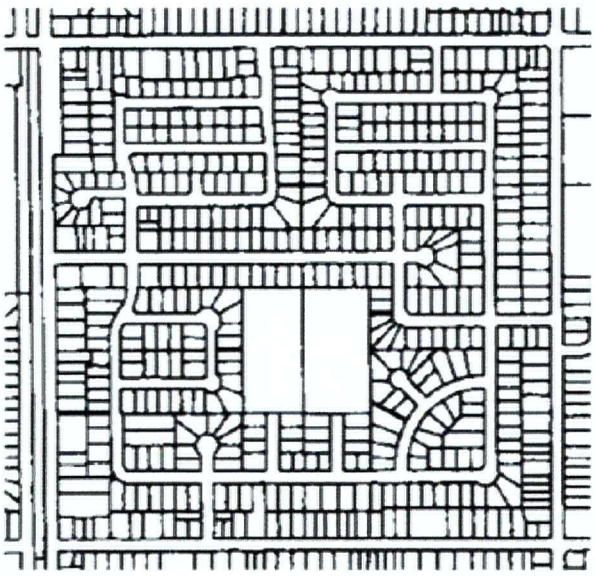
D Townhouse Mixed Use



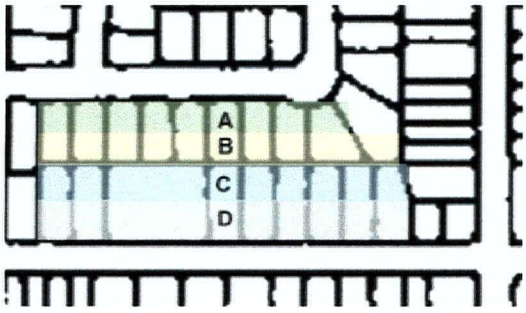
E Car Oriented Commercial

Lot

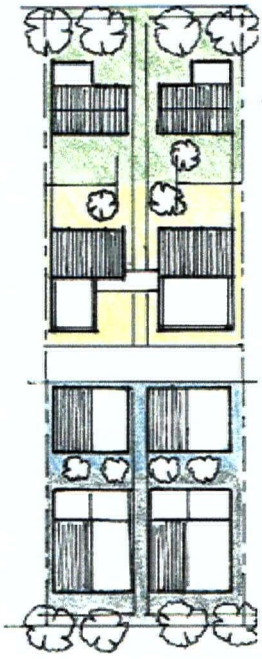
Transitional Model



Fortress Superblock



Block



A Detached Residence/Office

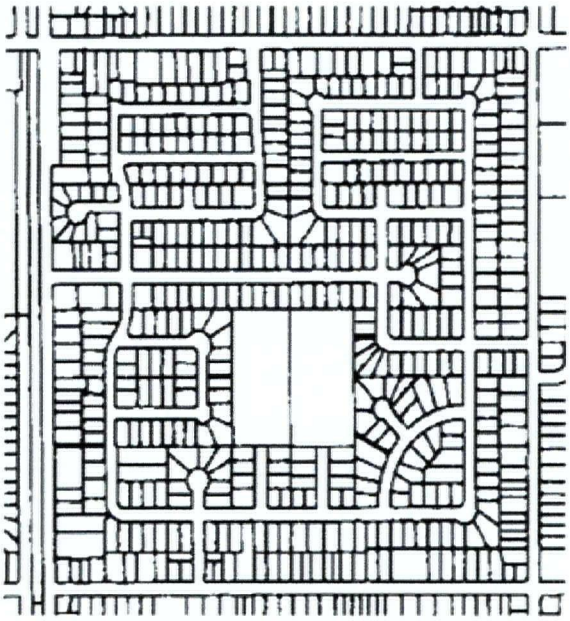
B Detached 2 Family Residence

C Townhouse Mixed Use

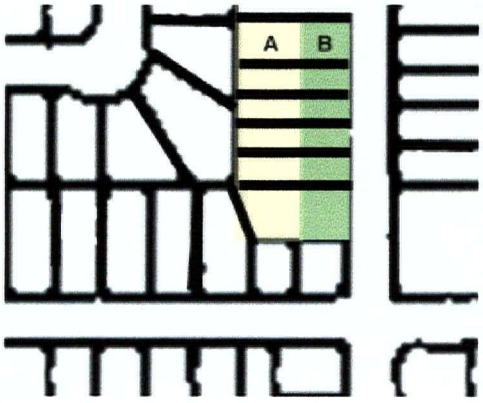
D Multiplex Residential/Commercial

Lot

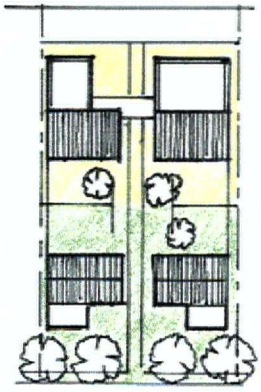
Subdivision Model



Fortress Superblock



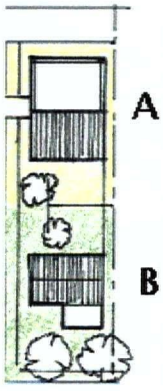
Block



A Detached 2 Family Residence

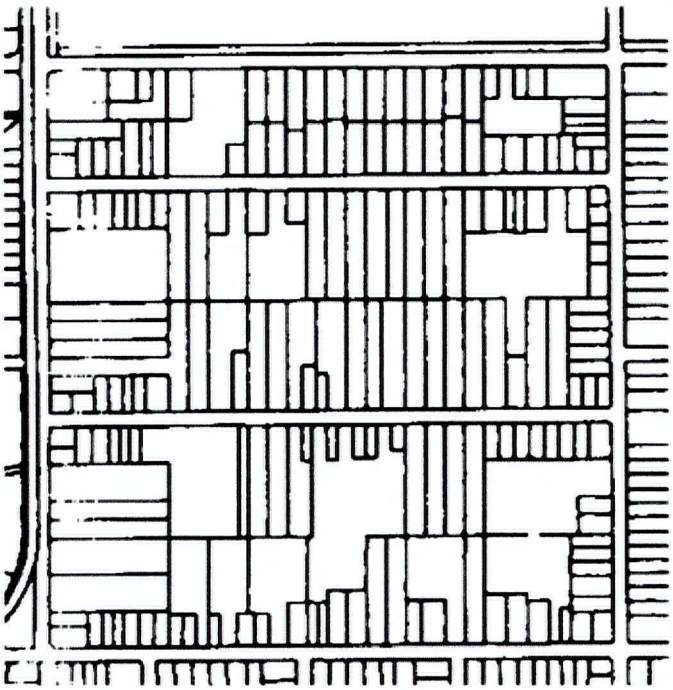
B Detached Residence/Office

or

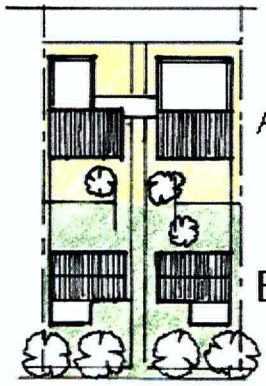


Lot

Mixed Use Model

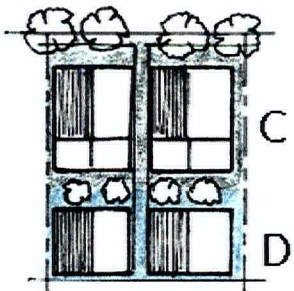


Linear Superblock



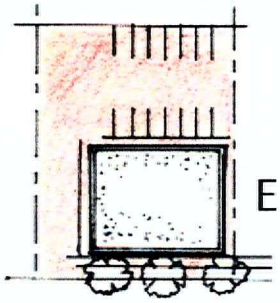
A Detached 2 Family Residence

B Detached Residence/Office

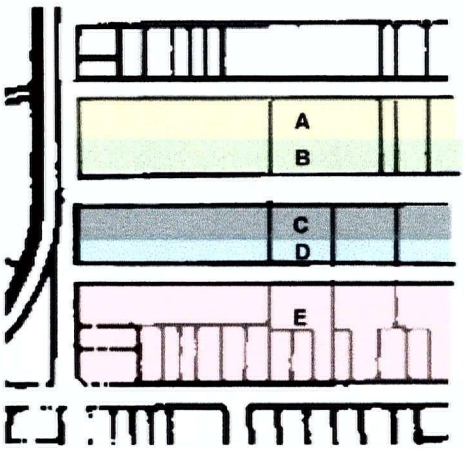


C Multiplex Residential/Commercial

D Townhouse Mixed Use



E Car Oriented Commercial



Block

Lot