HYBRID RESIDENTIAL DEVELOPMENT

An Exploratory Investigation of Multi-use Residential Development

By Barbara J. Orser

Equinox Management Consultants

Spring, 1993

CMHC Project Officer: Denys Chamberland

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Abstract

The research presents the findings from 14 Canadian and American hybrid development case studies. Market and social factors impacting mixed-use (multi-use or hybrid) housing are noted. Spatial needs, building design and municipal zoning issues are presented. This information is meant to be of use to housing policy analysts, municipal and provincial planners, architects, builders, home business advocacy organizations and other interested government agencies.

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Executive Summary

Overview

The review of literature suggests that documentation on hybrid housing and design in North America, and in particular in Canada, is limited.

Rigorous quantitative and qualitative data on Canadians and home-based work is also lacking due to methodological limitations of existing labour force instruments and the obscure nature of home work.

Most research related to hybrid design and mixed-use development is found in two streams of literature: urban redevelopment and community design.

The findings suggest that popular interest in the topics of home-based enterprise is high. However, hybrid housing, design and the interface of work and housing in residential settings may not be perceived as important issues. Alternatively, the literature and the hybrid housing market may be in their infancy.

The issues related to hybrid design are complex. The extent to which macroenvironmental factors encourage home work and the resultant impact on the hybrid housing market are yet to be determined.

Innovative hybrid housing designs such as the rural Bamberton (Vancouver Island) Development and Brown and Storey Architect's Toronto main street concepts should be monitored. The review process might highlight the problem and perceived limitations of these hybrid ideas from the point of view of both the designers/developers and local municipal planners, obstacles to development and feasibility of similar large scale hybrid designs in other Candian locations. Information can provide case illustrations of resolving conflicts to existing municipal by-laws and serve as a foundation for further pragmatic research in the area of hybrid residential development.

The number of "owner/designers" included in the case samples suggests that those most able to create a home/work space, do so. This may also reflect the survey bias because case studies were identified through a number of professional builder and architectural associations.

The investigative nature and difficulty of locating the case study sites suggest that to date, there are few, large, hybrid housing developments in Canada.

It remains to be seen if hybrid housing will have a significant impact on housing planning and housing policy.

Future research might investigate the interrelationship of such sample topics as: the changing structure of Canadian employment; technology in the home; family composition; women in the workforce; migration patterns; land supply (space

availability and affordability) as these topics relate to commercial/residential design.

Building Code and Municipal Regulations

Municipal regulatory issues were raised by seven of the fourteen case respondents. Concerns include: the length of time taken to review and adjust local by-laws, variation in the definition of permitted home work, limitations on commercial floor area, parking and vehicle traffic, the refuge and storage of commercial materials and fire/exiting regulations.

The time required to adjust for variances in standard building codes and by-laws varied up to a maximum of five years.

Several respondents indicated the need for designers and builders to work with city engineers, municipal officers and public interest groups "in good faith" to create appropriate variance requirements.

Two projects were awarded "bonus" variances for reciprocal contributions to the community such as non-site street improvements, privately subsidized housing and improved public park facilities.

Building codes were thought to reduce the flexibility of design for combined living and working space as the workplace was often accommodated in addition to limited residential area.

Hybrid design often combines the requirements for residential and commercial building codes.

Most municipalities limit the gross floor space that can be used for commercial purposes. The rule of thumb appears to be 25 percent. However, two case studies demonstrate limits of 30 percent and 49 percent to residential floor area.

It is suggested that municipalities consider "home work" as a new category of land usage thereby avoiding the use of specific definitional criteria of permitted or prohibited occupations.

Recent municipal by-law review committees (Mission, B.C.; Markham, Ontario; Beaconsfield, Quebec) are favouring performance standards to control the nature, scale and extent of the home occupations while minimizing the visibility of the commercial operations in residential neighborhoods.

No housing or municipal policy recommendations are presented as this research is exploratory in nature.

Elements of Housing Design

Research suggests that home workers assess space availability and "zone" the household into living, sleeping and working areas.

The more commercial the nature of work, the more evident the spatial separation of domestic and work activities. Discrete service operations or administrative activities which are not obtrusive are more likely than industrial and other commercial activities to be located on floors with family and household activities.

Hybrid design incorporates both the owner's lifestyle and the nature of the commercial tasks undertaken in the home.

Ample natural lighting was provided in most case sites to allow for energy efficiencies. However, too much natural light makes reading a monitor difficult.

An upgraded electrical supply, high capacity telephone lines and two way cable appear requisite to many home offices.

«Enquête exploratoire sur les ensembles résidentiels hybrides ou à fins multiples»

Résumé

Aperçu

Un survol des ouvrages semble indiquer que la documentation sur les habitations hybrides et leur conception, en Amérique du Nord et particulièrement au Canada, est restreinte.

Les données quantitatives et qualitatives rigoureuses sur les Canadiens et le travail à domicile présentent aussi des lacunes attribuables aux limites méthodologiques des instruments servant actuellement à mesurer la main-d'oeuvre ainsi qu'à la nature obscure du travail à domicile.

Le réaménagement urbain et la conception des collectivités sont les deux domaines qui fournissent les documents contenant le plus de données sur la conception hybride et les ensembles à fins multiples.

Les résultats manifestent le vif intérêt du public à l'égard de sujets liés à l'entreprise à domicile. Par contre, les habitations hybrides, la conception et la relation entre le bureau et la maison dans les établissements résidentiels ne sont peut-être pas perçues comme des questions importantes. Il se peut aussi que la documentation et le secteur de l'habitation hybride n'en soient qu'à leurs débuts.

Les questions liées à la conception d'habitations hybrides sont complexes. L'ampleur avec laquelle les facteurs macroenvironnementaux favorisent l'exploitation des entreprises à domicile et leurs conséquences sur le secteur de l'habitation hybride restent à déterminer.

Les concepts innovateurs d'habitations hybrides comme celui du quartier rural Bamberton (sur l'île de Vancouver) et celui de Brown et Storey Architect, situé sur une rue principale de Toronto, doivent être examinés. L'examen pourrait mettre en évidence le problème et les limites perçues quant à ces concepts hybrides tant du point de vue des concepteurs et des promoteurs que de celui des urbanistes municipaux ainsi que les obstacles à la production et à la faisabilité de concepts du genre à grande échelle ailleurs au Canada. Les renseignements peuvent illustrer des situations où des conflits relatifs aux règlements municipaux ont été résolus et servir de base à une recherche pragmatique détaillée dans le domaine des ensembles résidentiels hybrides.

Le nombre de «propriétaires-concepteurs» que contiennent les études de cas porte à croire que ceux qui sont le mieux en mesure de créer un espace maison-entreprise, le font. Cela peut également fausser l'enquête puisque les études de cas ont été relevées par l'entremise d'associations professionnelles de constructeurs et d'architectes.

Le caractère secret et la difficulté de trouver des emplacements semblent indiquer qu'à ce jour, il existe peu de grands ensembles hybrides au Canada.

Reste à voir si les habitations hybrides auront une influence considérable sur la planification et les lignes de conduite en matière de logement.

Des recherches ultérieures pourraient étudier les relations entre des sujets comme l'évolution de la structure de l'emploi au Canada, la technologie au foyer, la composition de la famille, les femmes sur le marché du travail, les modèles de migration, les terrains existants (disponibilité et abordabilité) ainsi que leur lien avec la conception à caractère commercial et résidentiel.

Le code du bâtiment et les règlements municipaux

Des questions relatives à la réglementation municipale ont été soulevées par sept des 14 répondants. Leurs préoccupations portent sur le temps nécessaire à la révision et à l'adaptation des règlements locaux, la modification de la définition du travail à domicile permis, les limites d'espace commercial, le stationnement et la circulation, l'entreposage du matériel commercial et les règlements en matière d'incendie et d'évacuation.

Le temps requis pour l'entrée en vigueur complète des dérogations aux codes du bâtiment standards et aux règlements allait jusqu'à cinq ans.

Plusieurs répondants ont indiqué que les concepteurs et les constructeurs devaient collaborer avec les ingénieurs et les fonctionnaires municipaux ainsi que les groupes de défense de l'intérêt public «en toute bonne foi» pour établir des exigences convenables relatives aux dérogations.

Deux projets ont obtenu des dérogations «en prime» pour des contributions réciproques à la collectivité comme une amélioration de la rue non liée à l'emplacement, des logements privés subventionnés et des installations améliorées dans les parcs publics.

On croyait que l'application des codes du bâtiment réduisait la flexibilité de la conception des espaces combinant le logement et le lieu de travail car ce dernier était souvent accompagné d'un espace résidentiel restreint.

La conception hybride combine souvent les exigences des codes du bâtiment résidentiel et commercial.

La plupart des municipalités limitent l'aire de plancher brute pouvant être utilisée à des fins commerciales. La règle générale semble être de 25 p. 100. Par contre, deux études de cas montrent des limites respectives de 30 p. 100 et de 49 p. 100.

Il est proposé que les municipalités considèrent l'«entreprise à domicile» comme une nouvelle catégorie d'utilisation des sols, évitant ainsi le recours à des critères définitionnels précis pour les modes d'occupation permis et interdits.

De nouveaux comités municipaux d'examen des règlements (Mission (C.-B.), Markham (Ontario), Beaconsfield (Québec)) préfèrent le recours aux normes de rendement pour le contrôle de la nature, des niveaux et de l'étendue des utilisations résidentielles tout en favorisant la réduction au minimum de toute trace d'activités commerciales dans les quartiers résidentiels.

Aucune recommandation relative à l'habitation ou aux lignes de conduite municipales n'est faite étant donnée la nature préliminaire de la recherche.

Éléments de la conception des habitations

La recherche montre que les travailleurs à domicile évaluent l'espace disponible et établissent le «zonage» de l'habitation selon l'espace de séjour, les chambres et l'espace de travail.

Plus la nature du travail est commerciale, plus l'espace réservé aux activités professionnelles sera séparé de celui qui est destiné aux activités domestiques. Des opérations discrètes ou des tâches administratives qui ne gênent pas conviennent mieux que les activités industrielles ou autres activités commerciales aux étages réservés à la famille et à ses activités.

Les habitations hybrides tiennent compte à la fois du mode de vie du propriétaire et de la nature des activités commerciales qui se font à la maison.

La plupart des emplacements des études de cas bénéficiaient de beaucoup de lumière naturelle favorisant l'efficacité énergétique. Par contre, une trop grande lumière naturelle rend la lecture à l'écran difficile.

Un approvisionnement accru en électricité, des lignes téléphoniques à haute capacité et un câblage bidirectionnel semblent requis dans de nombreux bureaux situés dans les maisons.

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Canada

I. Research Overview

"Growing densities and evolving building techniques have mixed and piled one function atop another, defying critics who contend that a building should look like what it is. In the hybrid, form may remain absolute while function is changing and in conflict" (The Alphabetical City, 1990).

This exploratory case study investigates market developments and trends in the non-residential use and design of the home and assumes that the non-residential use of the home is an important economic and social phenomenon.

A. Introduction

The evolving nature of work, leisure and family structure influence Canadian habitation. For the most part, North American housing supports a perceived dichotomy between public work and private household activity. During the last two and a half centuries work has been centralized in publicly visible, "managed" commercial and industrial settings, primarily outside the home. Family, parenting, leisure, food preparation and consumption have been the province of the private domain. This perspective or model is subtly ingrained within our Canadian urban and non-urban community form, in municipal land-use planning, policy and practice; within building codification standards, in residential housing design and layout.

The principles that support the traditional work/nonwork relationship and the dichotomy of the private/public relationship are, however, being challenged by numerous, significant, and of course, interrelated social and economic changes. The structure of the Canadian economy, part-time employment, technology, women in the work force, need for job autonomy and Canadian government policy are creating new work norms (Foster & Orser, 1992). These in turn influence habitation and in its infancy "hybrid" housing development.

Ironically, the same forces that once encouraged store top accommodation at the dawn of the automobile in the early 1900's, are similar influences that may now generate interest in hybrid and mixed-use development. Van Tilburg (1992) suggests these market forces include: the scarcity of urban and rural land, rising housing costs and strained transportation systems. Hybrid or mixed-use developments may support more cost efficient commercial space with accompanying residential usage.

The potential impact of hybrid design is not limited to the urban context. While mixed-use development within a single building structure is more visible and formalized in urban centers, the concept is not at all new to rural Canada. Home work is a significant rural phenomenon. Although the Census classifies 25 percent of Canada's population as rural, 48 percent of those who spend all or most of their time working at or from home live in non-urban areas (Orser and Foster, 1992a).

Capjack (1989) of the University of Alberta suggests that the shift to rural off and non-farm work activity and home-based work by rural families is perhaps one of the most dramatic shifts taking place in agricultural production today. Hybrid dwellings accommodate these changes.

Definitions:

For the purpose of this research, mixed-use, multi-use and hybrid space are used interchangeably.

Ahrentzen (1991) defines a hybrid unit as "a residential structure which contains both residential and business spaces and activities; residents of that structure occupy and manage both spaces; and such housing that is intentionally designed to incorporate both spaces."

For a complete review of terms and typologies on home work, hybrid design and mixed-use development cited in this report see Appendix A and B.

B. Purpose of Study:

A key objective of the report is to collate and summarize information on residential hybrid design. Information is meant to assist: municipal and provincial planning officials, building code designers, architects, builders, home business advocacy organizations and other interested government agencies.

The purposes of this exploratory investigation on (hybrid) multi-use residential development study are as follow:

1. To identify types of private sector hybrid housing development;

2. Qualify the nature of these case study dwellings and commercial developments, providing an indication of the success, relevance, difficulties and obstacles encountered on these projects;

3. Through a review of literature on housing and the work/family interface, profile current research on the issues of housing as they relate to multi-use housing form and determine the needs for future research.

This research is not a census of the extent and type of residential and hybrid development. The case study methodology is used to identify major design, coding and municipal issues, as well as problems and opportunities faced by the multi-use residential and commercial development community.

Information is meant to be provocative and to provide ideas for future study on housing design, policy and guidelines for mixed-use development.

C. Nature of The Problem

Research indicates that a significant number of Canadians are engaged in home-based work. Almost **23 percent Canadian households engage** in some form of paid home work activity (Orser & Foster, 1992). If self-employed Canadians who work at least some of the time either in a primary or secondary job are used to define "home worker", then approximately **ten percent** of Canadian dwellings house at least one self-employed home-based business owner.

These estimates are consistent with the Canadian and American literature. Whether one adopts an inclusive definition of homework i.e. any paid employment undertaken in the home or a more exclusive definition of home work i.e. self-employed workers employed full-time in a home business - home work activities impact from 5 to 23 percent of the Canadian work force.

These recent data substantiate what Canadian researchers have speculated in the late eighties (Dykeman, 1989; Stevenson, 1983 and Wood, 1992). Home work is a major source of employment for Canadians and not marginal or ad hoc. It could be qualified as an important influence on the commercial and residential housing markets and in the longer term, housing policy.

Both quantitative and qualitative data on Canadian hybrid housing and learning about the work and housing interface are in infancy. This is due to a number of now documented methodological and theoretical challenges in the subject area and the relatively new concept of "hybrid" design and development. As a result, many home businesses and hybrid dwellings remain obscure, as does the impact to Canadian housing development and policy.

The investigation of nonresidential use of the home and the impact on home design is complex in that it must consider: the varied nature of paid employment within the home, contributing technology, the changing family/work interface and other social and economic influences.

Much of what is currently known about the nonresidential usage and design of the hybrid housing has been created through secondary data analysis, small data samples and stereotypes popularized in trade magazines rather than through rigorous quantitative and qualitative data analysis. For example, in the review of literature on home-based work, residential development and design, among the approximately 1,000 references noted - few (primarily American) studies and articles dealing with **housing issues** are cited. While additional information is available, it is not found among standardized on-line data banks.

This lack of reliable data on home businesses and the impact of the home work phenomena on housing policy may also reflect the infancy of many micro-businesses or turnover of the business operation. In a national survey of over 500 Canadian home businesses, Priesnitz (1988) found that over 60 percent of home-based businesses were between two and five years old. Similar results were obtained in British Columbia, where 83 percent of respondents had started their businesses within the last seven years and over one third (37 percent) had been in business for less than four years (B.C. Ministry of Industry and Small Business, 1986).

Another challenge to hybrid housing/research is the fragmented nature of municipal by-laws and provincial building codes (Orser & Foster, 1992a). For example, at the time of writing this report, The City of Toronto prohibits most commercial activities in the home other than a limited number of specified occupations. The neighbouring City of Markham is proactive in its position on home-based work and has created a steering committee to review and rewrite by-laws to encourage home enterprise.

Much remains unknown about the home work phenomenon. There are few significant Canadian studies on the commercial/residential usage of the home.

The findings from this case study may be used as a foundation or first step for further research on innovative hybrid development.

D. Research Methodology

This study consisted of three phases. Phase 1 entailed an on-line data search and review of literature on home-work and mix-use residential housing. Phase 2 entailed telephone interviews with approximately sixty architectural designers and architectural associations, private builders, real estate agents, municipal planning departments, home-business associations, home work magazines and other government agencies to identify mixed-use dwellings. Phase 3 involved collating case material and the presentation of the research findings.

From the twenty examples of hybrid housing identified in the survey process, fourteen were chosen for case study and are profiled in this research report. Information was lacking, material inadequate or time unavailable to complete the remaining six case studies.

An attempt has been made to showcase a variety of hybrid "types" including inner developments units, completed hybrids, work in process and samples from both eastern and western Canada. Several American examples are also included.

Phase 1: On-Line Information Search

During June 1992, an on-line data search was conducted using the source words: home work; work at home, housing, residential design, multipurpose building, hybrid housing; and home office. Using the CD-ROM and BRS ABI/Inform data banks provides international coverage of 800 journals on banking, insurance, real estate, accounting, finance, marketing, data processing and telecommunications. Additional references are sourced from work completed at The School of Architecture and Urban Planning, University of Wisconsin, Milwaukee (Ahrentzen, 1991).

Phase 2: Telephone Interviews

To identify Canadian hybrid case examples, the research moved into an investigative mode with telephone calls to a number of Canadian and then American sources. Only those sources which provided relevant information are noted below. These included:

The Canadian Architectural Association
The Canadian Home Builder's Association (6 Provincial Council Executive Officers)
Ontario Home Builder's Association Technical Committee (5 members)
Architectural Association Offices
The Architectural Institute of British Columbia
Alberta Association of Architects
Ontario Association of Architects
Nova Scotia Association of Architects
Architects Association of Price Edward Island
City of Toronto Planning Department
City of London Planning Department
The Canadian Urban Institute
The Federation of Canadian Municipalities
Canadian Architect Magazine
The Canadian Housing and Renewal Association
Visual Art Newsletter
School of Architecture, University of B.C.
The Ontario Ministry of Housing
The B.C. Home Business Report
Head Office At Home Magazine

The Home Business Advocate Newsletter
The B.C. Artist Live/work Committee
Artists for Creative Environments

City of Vancouver Planning Department

The initial research terms of reference established an objective of ten multi-use residential/commercial development projects in the U.S., Britain and Canada. Meeting this objective with Canadian case examples surpasses the original research mandate. No British case studies were found.

A semi structured discussion guideline was developed by the researcher, with input provided by **Denys Chamberland,** Senior Analyst, Centre for Future Studies, CMHC and the designated project research officer. Two draft copies of this research report were reviewed by the research officer. The final report incorporates a number of comments and helpful suggestions made by the research officer. A copy of the research instrument is included in Appendix B.

Case study telephone interviews were conducted with mixed-use residential developers, architects and real estate developers during the months of July and August. Interviews were fifteen to forty minutes in length.

Phase 3: Report Organization

The report is divided into five sections. Section II highlights market and social factors impacting hybrid housing in Canada.. Section III provides an overview of the case sites. Where available, line drawings and supporting visual material are included. Section VI summarizes the research findings and recommendations. The Appendices include: a glossary of terms, typologies of hybrid design; the research instrument, additional by-law material and references.

II. Market and Social Factors Impacting Hybrid Development

The increased visibility and commercial credibility of home work reflects a number of macroenvironmental factors (economic, technological, legal, demographic and political) and micro level situational factors (changing values of home and work; need for job autonomy, flexibility due to family responsibilities; and the lack of "other" employment options).

This section briefly highlights factors which are influencing work in and/or from a residential dwelling. This section of the report is meant to provide a market context to hybrid housing and overview of social forces that may encourage multi-use residential development. This report considers both sociological and economic interplay and their influence on the design, creation and development of hybrid housing.

A. Macroenvironmental Factors

1. Changing Structure of the Canadian Economy

The current North American economic downturn and the resultant work force layoffs in both white and blue collar jobs in "smokestack" industries provide evidence supporting the decline of traditional mass-production efficiency models (Pratt, 1986; Christensen, 1988; Orser, 1991). Higher value added products, the volatility of world capital markets, electronic cottaging, corporate restructuring, the leveling of management hierarchical management structures, the emergence of family businesses and the emergence of the autonomous mobile "knowledge worker" are all ingredients in what has been popularly called the "power shift" (Horvath, 1986; Orser & Foster, 1992; The State of Small Business, 1989).

This shift in managerial process provides more flexibility to work relationships. Autonomy appears to be a critical factor in clerical and other home workers choice of employment location. In a survey of 190 home-based business owners (Orser and Foster, 1992), note that the single most significant factor encouraging home work cited was flexibility of working hours (80 percent response) and independence (90 percent of respondents).

2. Changing Employment Patterns

The increasing number of part-time employees following the recession on the early eighties is one of the most visible forms of our changing economy (Full Employment Is An Achievable Goal, 1990). Between 1975 and 1986, the proportion of part-timers who worked both in and from home rose from 10.6 percent to 15.6 percent.

The number of involuntary part-time workers is increasing significantly creating what has been coined "entrepreneurship by necessity in the home". In 1975, approximately one in 100 workers was part-time involuntarily and by 1985, the ratio had risen to about one in 20 (Innovative Approaches to Enterprise Development, 1998).

Of those who worked both in and from the home, most work only part-time in the home work site (Orser & Foster, 1992). However, the "type" of work activity or occupation of the home-based worker appears to influence the amount of time spent working in the home versus out of the home. For example, in a predominately male sample group of computer magazine readers, Olson (1987) finds that while respondents indicate they work an average of 50.6 hours per week, the average amount of time they work in the home was 14.7 hours.

3. *Technology as a Catalyst:*

While technology is likely not the driving force behind home-based enterprise, two points are consistently noted in the review of literature: technology makes a break with traditional managerial procedure and despite the popular press perception and championing of home work it remains in its infancy in Canada.

4. *Government Policy:*

Lastly, home-based work has become a part of public policy and economic planning. For example, in 1988, the Canadian government announced a National Policy on Entrepreneurship (Small Business Canada, 1988). Its objective is to promote entrepreneurship, particularly to groups such as youth, women, native Canadians and the disabled and to provide for an environment which nurtures entrerpeneurship among existing small and medium business programs. A number of provinces, most notably British Columbia, have introduced training programs, seminars, trade shows and newsletters targeted directly to home-business owners.

A number of other Canadian provinces are piloting similar programs. Certain federal and provincial departments now provide for at home work options for full-time and part-time employees. For example, in 1992, the Treasury Board institute a three year pilot program to accommodate and encourage employees to work part-time in their homes. On the eastern seaboard, The Labrador and Newfoundland Economic Recovery Commission have designated home-based employment as one of eleven development initiatives for the two islands.

All of these influencing factors theoretically support more multi-use residential usage. The extent that these environmental forces have actually impacted the housing market and housing design is yet to be determined.

SECTION III: Hybrid Residential Development Case Studies

Case 1 -	Inner City Warehouse	Vancouver
Case 2 -	Gallery, Workshop and Office	Vancouver
Case 3 -	Main Street Mixed-use Project	Toronto
Case 4 -	Residential Regeneration Project	Pittsburgh
Case 5 -	Inner City Main Street Project	Toronto
Case 6 -	Subsidized Mixed-use Development	Venice, Cal.
Case 7 -	Hybrid Communal Design	Minneapolis
Case 8 -	Hybrid Townhouse Design	Edmonton
Case 9 -	Residential Renovation	Downsview
Case 10 -	Modernist Studio Home	Toronto
Case 11 -	Modular Home Office Design	Vancouver
Case 12 -	Remote Telework Community	Vancouver Island
Case 13-	Rural Home Office Renovation	Sterling, Ontario
Case 12-	Commercial/Residential Development Park	London

Case Study 1

Inner City Warehouse Design
Vancouver, B.C.

Contact: Mark Ostry
Suite 12
2975 Oak Street
Vancouver, B.C.
V6H 2K7

The Vancouver development is located near the famous eastside Gastown area and includes 5 renovated warehouses designed to meet the needs of the community's low income artists. Initiated as a design grant, the vacant industrial property now provides for 12 600-1500 square foot units and 36 1000 square foot artistic commercial/residential units with no defined design or designated areas for work and living activity. As the by-law cannot control who rents the units, development approval provides for no more than 30 percent living space ensuring that units remain occupied for work and artistic/commercial purposes.

No features other than "raw space", concrete flooring and basic residential amenities are provided. Each unit has a restriction of 2 persons per unit. The concept has met with market approval with a 0 vacancy rate and waiting list of 200.

Project Title:	**Live/Work Project**	
Contact:	**Mark Ostry**	
Address:	**Suite 12, 2975 Oak Street, Vancouver, BC, V6H 2K7**	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Warehouse: Commercial/ Residential	Inner City, Vancouver	Full Occupancy
Building Description:	• 36 - 600-1,500 sq. ft. reconverted (average of 1,000 sq. ft.) • Underutilized inner city warehouse building • Target market: artists • Concept: to provide affordable work and living space • No features provided only "raw" space • Partially subsidized units available	
Design, Zoning, Code Issues:	• Provision for 30% residential area (only) • Strong local support from Artists For A Creative Environment • Numerous variances required; pertaining to residential zoning, fire hazards, air ventilation, structure	
		CASE: 1

Case Study 2

Gallery, workshop and office
Vancouver, B.C.

Contact: Frits Devries
Architect
Frits de Vries Architecture Ltd.
1834 West 1st Ave.
Vancouver, B.C.

The gallery, workshop, office and residential unit provides space to meet the professional needs of the architect/owner and his spouse. The front floor houses a retail gallery; the second an architectural office with separate entrance and the third floor a 500 square foot residential suite with courtyard. Located in Vancouver's light retail district, the development serves the commercial needs of both businesses which rely primarily on client referrals (versus street front traffic).

Built in 1990, the area was originally zoned as mixed use with 50 percent retail depth of lot required. The architect/owner work with city engineering to achieve a bonus system for additional commercial space and eight adjusted parking allotments. Parking on grade is used for visitors with a rear 2 stall garage.

The existing structure entailed added expense to meet Vancouver seismic requirements with steel reinforcements, 2 story warehouse block house and foundation. The anticipated resale of the unit is consider low as it was customed designed to meet very specific needs of the owners.

Project Title: **Contact:** **Address:**	**Gallery Workshop** **Fritz Devries, Architect** 1834 West First Avenue, Vancouver, BC V6J 1G5	
Building Type Detached, mixed-use	**Location** Mainstreet Urban, Vancouver	**Stage of Completion/Vacancy Rate** Completed 1990
Building Description:	• Store/gallery frontage; second floor architect's office; third floor; balcony residential • 500 sq. ft. residential & courtyard; 1,000 sq. ft. of commercial space • Fire partitions are smoked glass. Design provides for moveable walls	
Design, Zoning, Code Issues:	• Existing municipal mixed-use zoning allowed for retail usage of up to 50% depth of lot. Required modifications and "bonus system" of space with variances to parking limits, garage design, structure. • Substantial costs and delays due to required variances • Worked directly with city	
		CASE: 2

Frits de Vries Architect Ltd.

Tel 604 736.7820

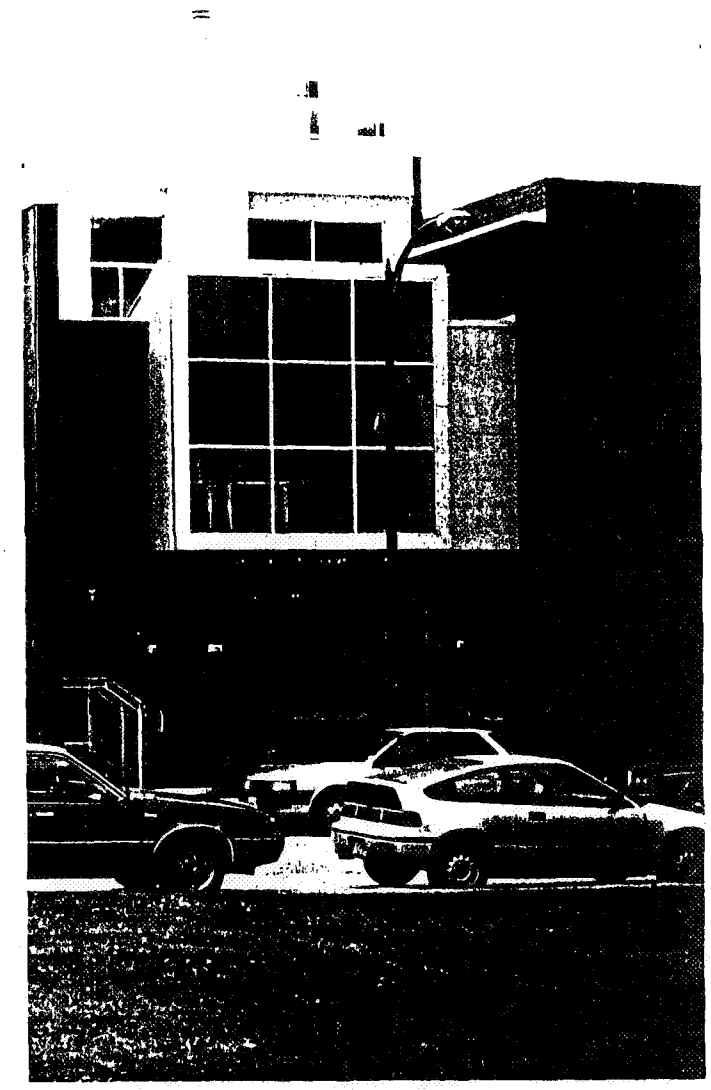
Fax 604 736.8820

1834 West 1st Ave

Vancouver, BC

Canada V6J 1G5

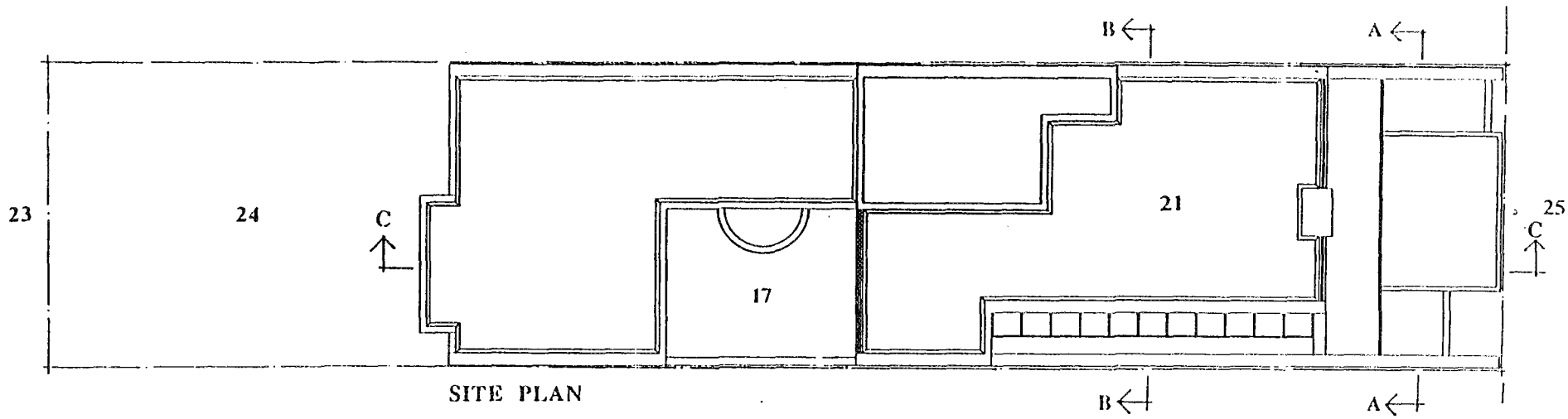
Architecture Urban Planning Interior Design



gallery / workshop of Catbalue Gold and Silversmith Ltd. and office of Frits de Vries Architect Ltd.

1832 ◦ 34 ◦ 36 WEST 1ST AVENUE

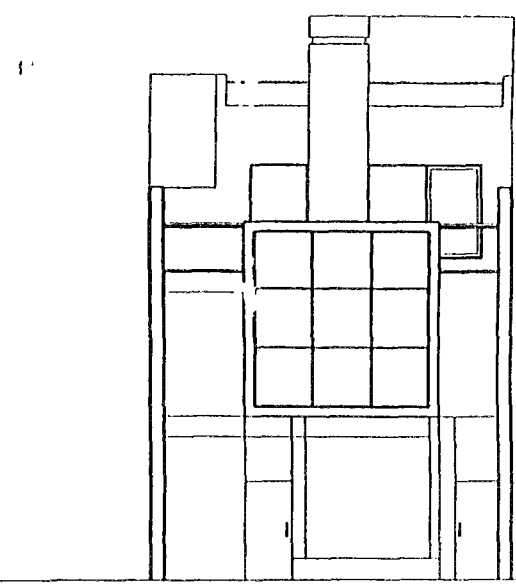
VANCOUVER, B.C. FRITS DE VRIES ARCHITECT LTD.



SITE PLAN

LEGEND

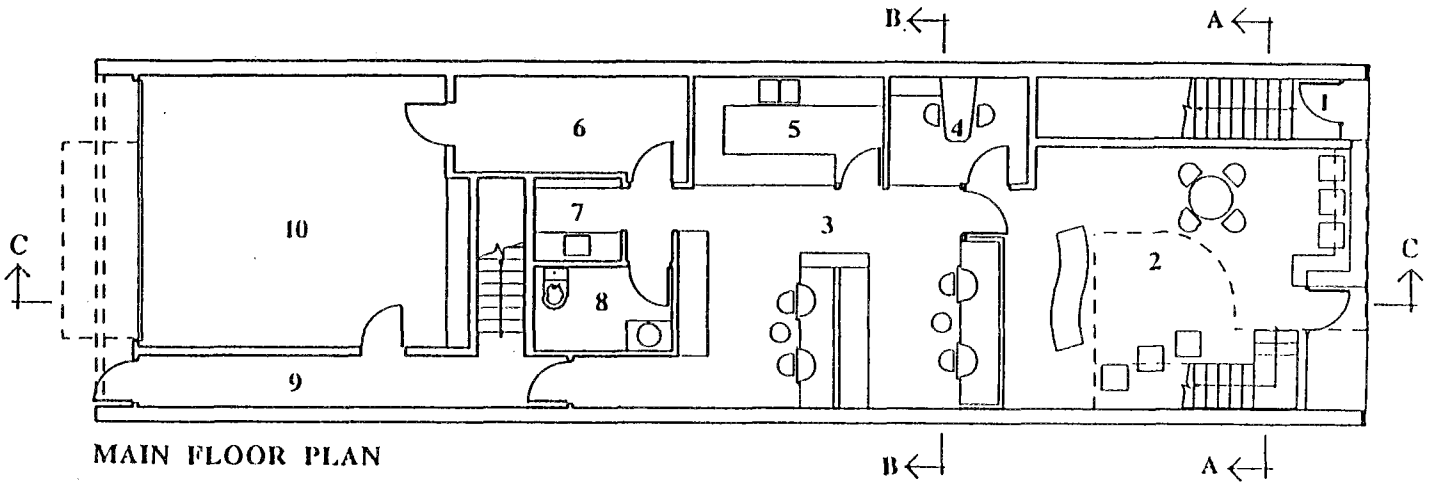
17	COURTYARD
21	DECK
23	LANE
24	PARKING
25	SIDEWALK



NORTH ELEVATION

1832 ◦ 34 ◦ 36 WEST 1ST AVENUE

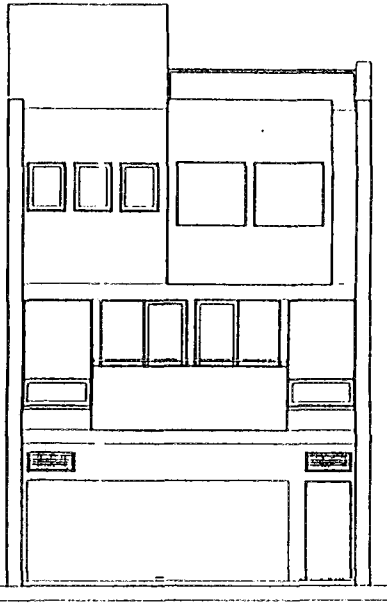
VANCOUVER, B.C. FRITS DE VRIES ARCHITECT LTD.



MAIN FLOOR PLAN

LEGEND

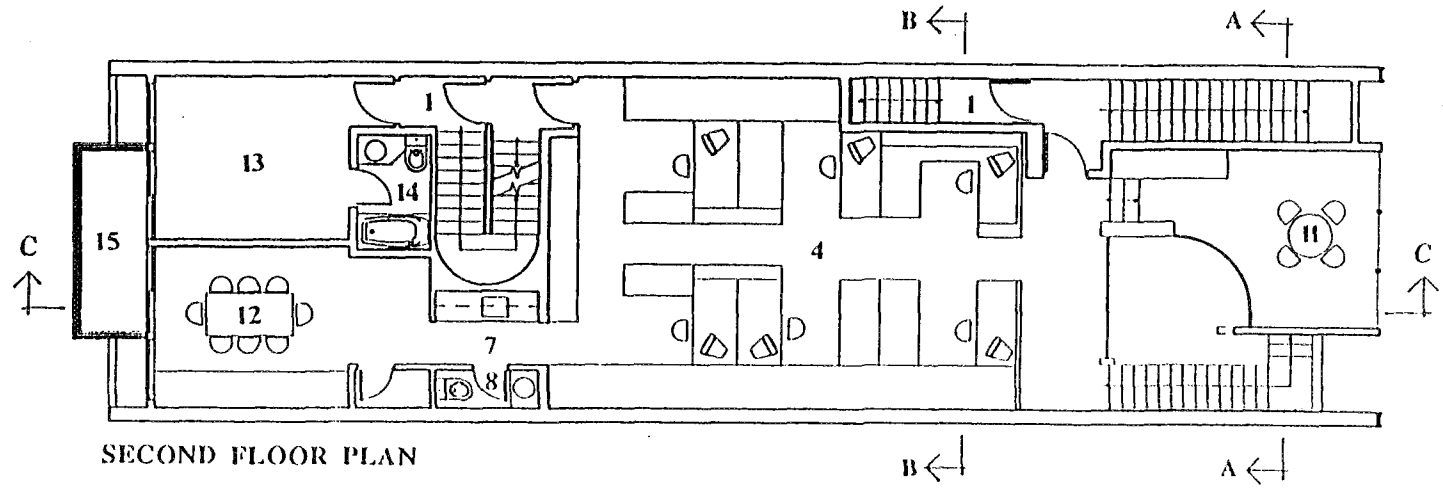
1	ENTRY
2	RETAIL
3	WORKSHOP
4	OFFICE
5	POLISHING RM.
6	STORAGE
7	COFFEE
8	WASHROOM
9	CORRIDOR
10	GARAGE



SOUTH ELEVATION

1832 ◦ 34 ◦ 36 WEST 1ST AVENUE

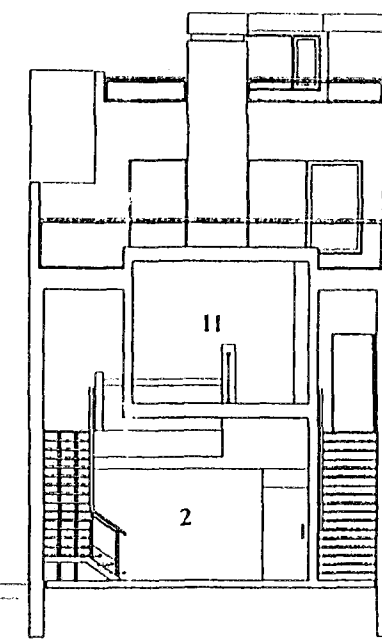
VANCOUVER, B.C. FRITS DE VRIES ARCHITECT LTD.



SECOND FLOOR PLAN

LEGEND

1	ENTRY
2	RETAIL
4	OFFICE
7	COFFEE
8	WASHROOM
11	SITTING
12	BOARDROOM
13	BEDROOM
14	BATHROOM
15	BALCONY



SECTION A-A

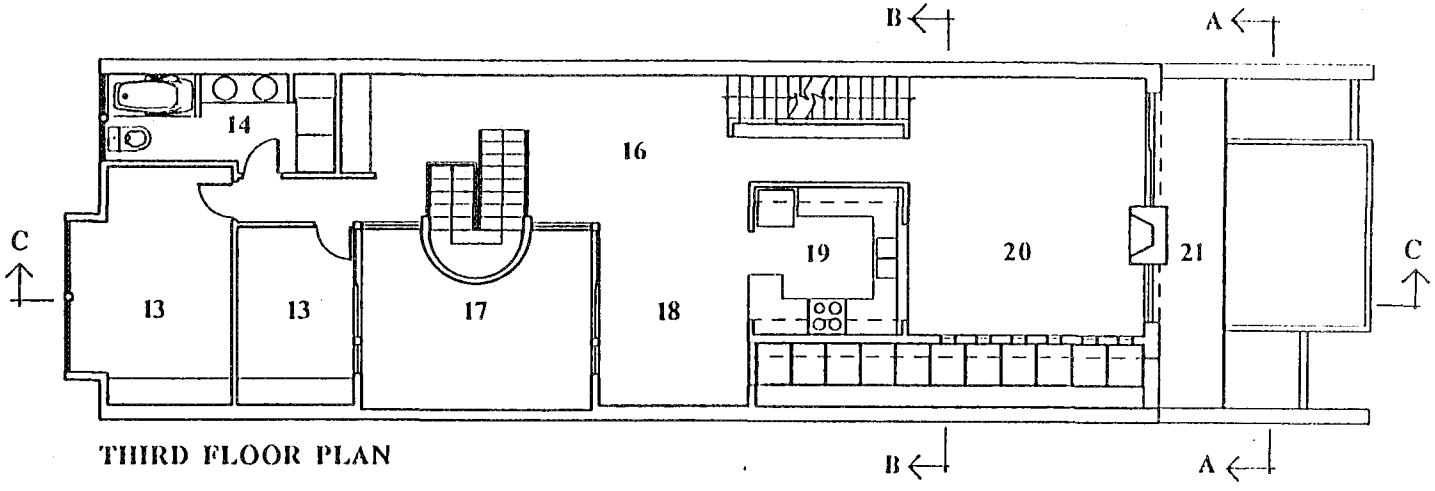
15

15 10

1832 ◦ 34 ◦ 36 WEST 1ST AVENUE

VANCOUVER, B.C.

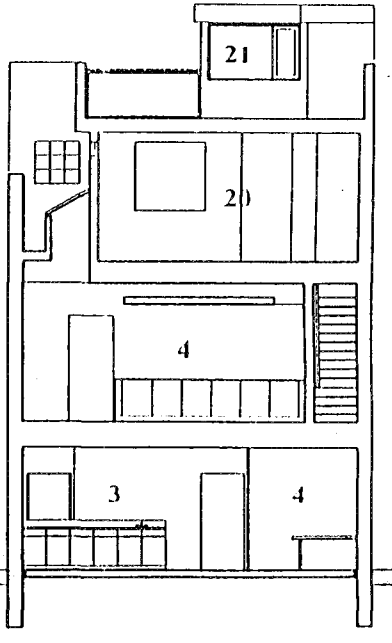
FRITS DE VRIES ARCHITECT LTD.



THIRD FLOOR PLAN

LEGEND

3	WORKSHOP
4	OFFICE
13	BEDROOM
14	BATHROOM
16	ENTRY HALL
17	COURTYARD
18	DINING ROOM
19	KITCHEN
20	LIVING ROOM
21	DECK



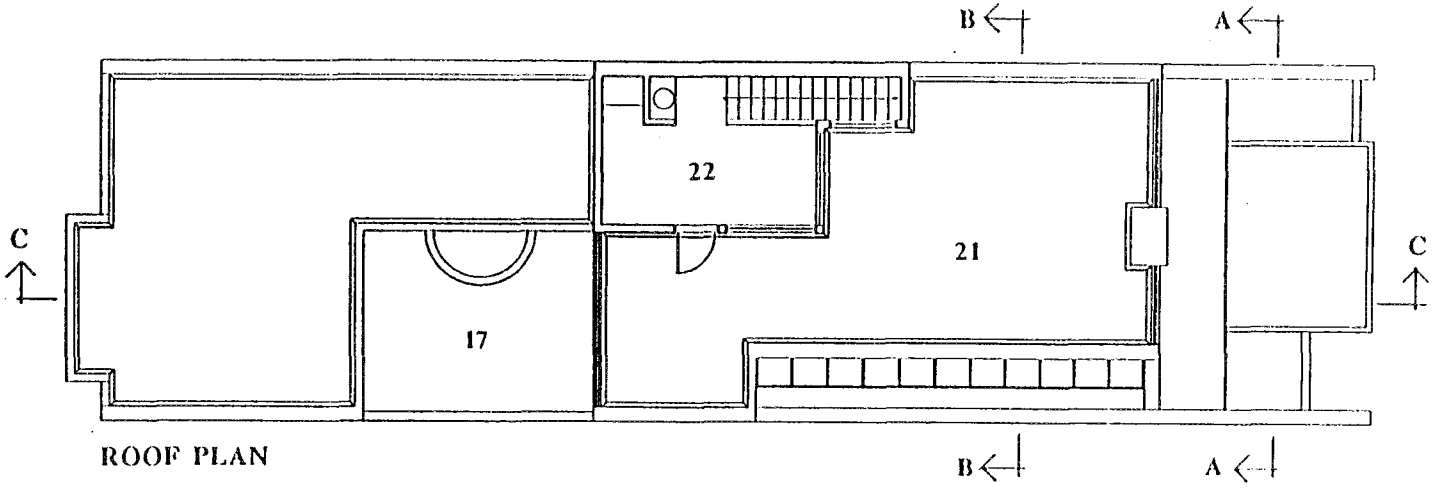
SECTION B-B

1832 • 34 • 36 WEST 1ST AVENUE

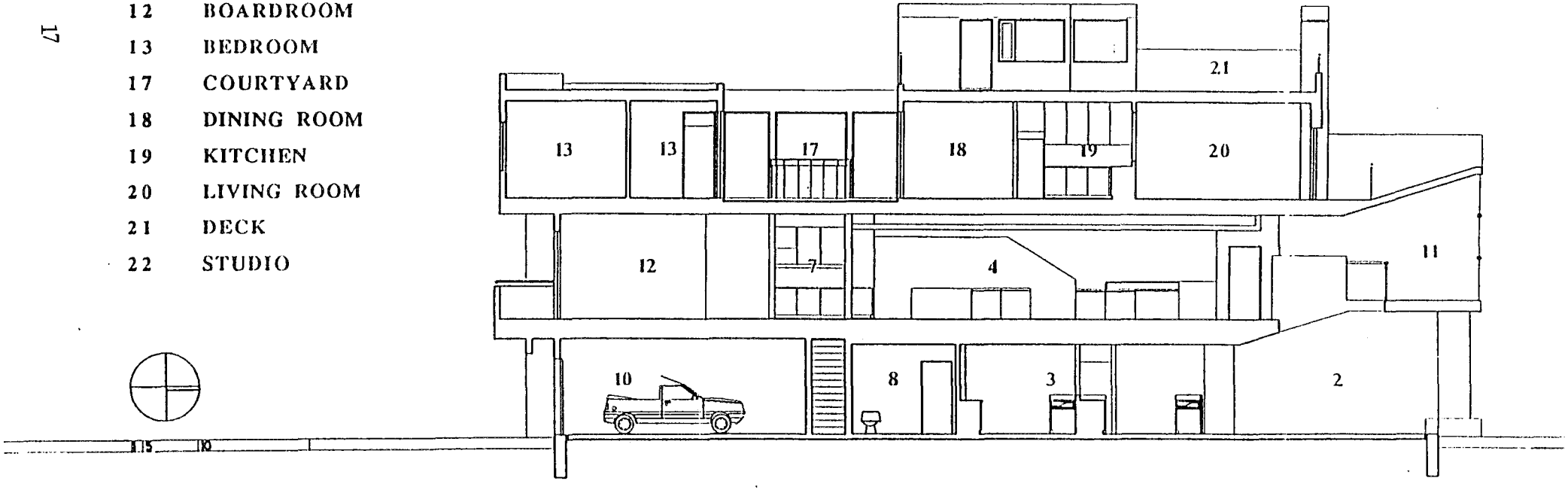
VANCOUVER, B.C. FRITS DE VRIES ARCHITECT LTD.

LEGEND

2	RETAIL
3	WORKSHOP
4	OFFICE
7	COFFEE
8	WASHROOM
10	GARAGE
11	SITTING
12	BOARDROOM
13	BEDROOM
17	COURTYARD
18	DINING ROOM
19	KITCHEN
20	LIVING ROOM
21	DECK
22	STUDIO



ROOF PLAN



SECTION C-C

Case Study 3

Main street Mixed-use Development
Yonge Street Site

Architects: Brown and Storey Architects
James Brown
Kim Storey
58 Stewart Street
Toronto, Ontario
Canada

Under a main street design competition sponsored by the City of Toronto, the mixed-use Yonge Street design considers live/work issues confronting Toronto's professional community i.e. the lack of affordable, downtown, suitable work and living space. The design was selected among 600 entrants.

Several options are made available: (a) the Yonge Street wing can be made up of office/work spaces with residential units contained in the higher, parallel wing; or (b) the Yonge Street wing and rear parallel wing can contain 2-storey units (1 story of workspace, 1 story for living space). The option of separating "work" into the front wing with house and nonwork activity in the rear wing allows one to "work" on a busy street; live on a quiet street. This live/work space flexibility is considered by the design team as ideally suited to other main street projects.

The concept provides 600 sq. feet of residential space and 600 square feet of work space plus separate work areas of up to 500 square feet in the unit's front wing. The project was designed for the proposed "Main Street Guidelines" with no use restrictions, triple density and freight up to eight stories.

Existing building code requirements may prevent the project from being economically feasible. According to the architect "no single special provisions are made between very large buildings and smaller buildings i.e. fire safety requirement and single unit/safe haven. The result is we are forced to work with 1950 design codes in addressing 1990 issues."

The architects suggest that municipal developers have "backed off" residential regeneration projects with few case models being built to determine their feasibility.

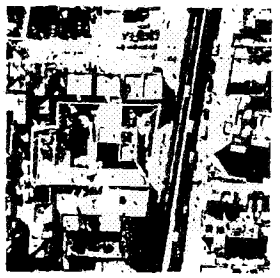
Original zoning designation prior to the project was commercial providing for either (a) 3 x commercial or (b) 1 x residential. Current zoning proposals ask for total 3 x including a maximum 2.5 residential, and maximum 0.5 commercial. The architects suggest that "use should not be zoned on main street development at all".

Multiuse Residential Development

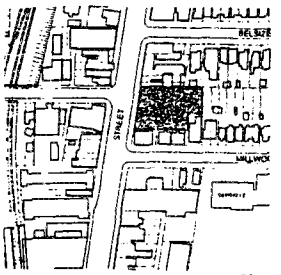
Project Title:	Mainstreet Competition	
Contact:	James Browns Architect	
Address:	Storey and Associates, 58 Stewart Street, Toronto	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Apartments, One Building Commercial & Residential	Inner City, Yonge Street Toronto, ON	Design Competition (Published and Exhibited)
Building Description:	• Commercial or residential (optional) usage: Yonge Street wing allows for office/ work space with residential units in higher, parallel wing and/or 2 storey units (1 storey work space , 1 storey living space) • Main Street design initiative allows for "integrated" residential/commercial front main street usage, home work, interior furnishings not included but all units provide for live/work area	
Design, Zoning, Code Issues:	• Current proposal calls for 3x including a maximum 2.5 residential and maximum .5 commercial - up to 8 storeys • Existing building codes do not suit this economic development project due to coding variances required on medium sized residential units i.e. safe havens, single exit	
	CASE: 3	

YONGE STREET SITE

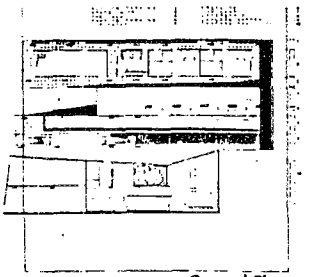
1



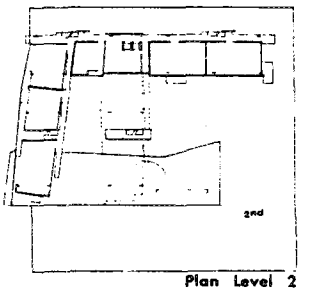
Aerial



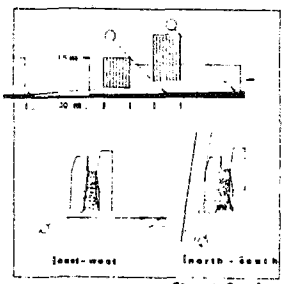
Site



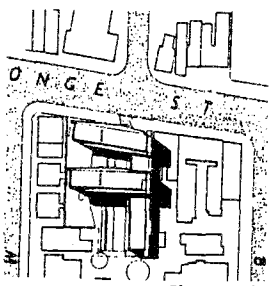
Ground Plan



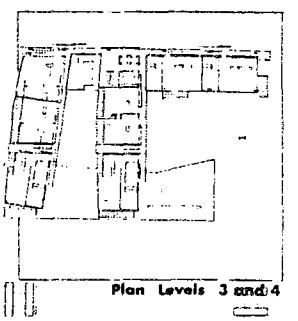
Plan Level 2



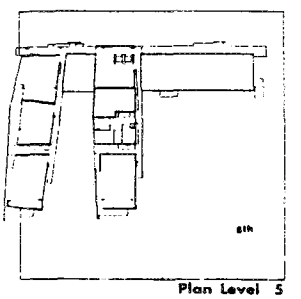
Street Section



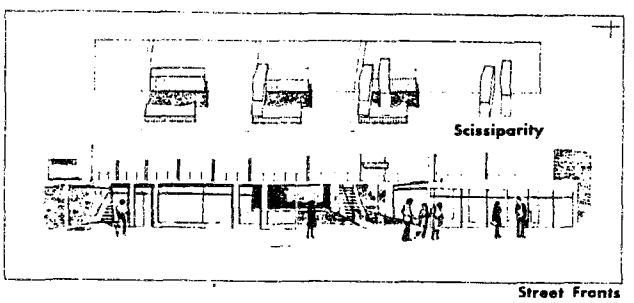
Planometric



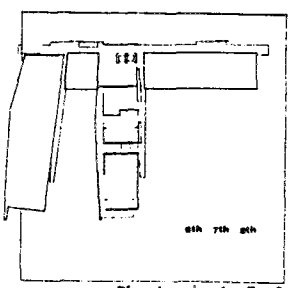
Plan Levels 3 and 4



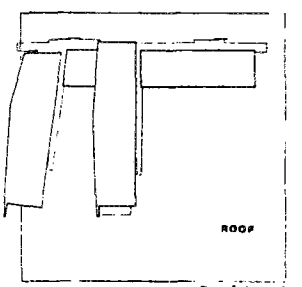
Plan Level 5



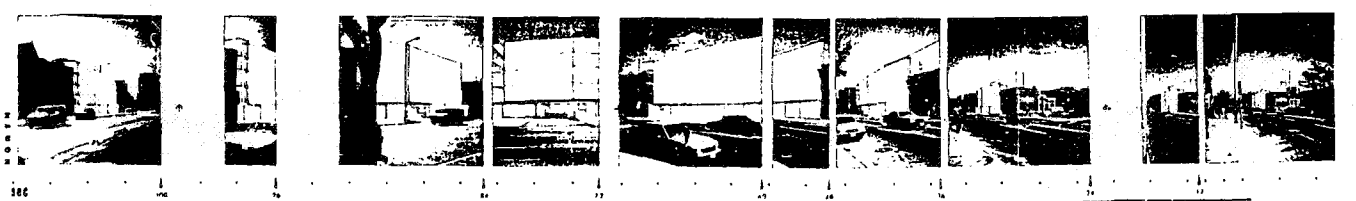
Street Fronts



Plan Levels 6, 7, 8



Roof Level



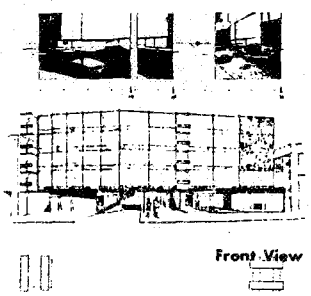
TIME SEQUENCE

TORONTO MAIN STREETS

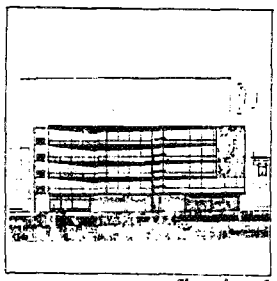
Offices Between Commercial and Residential

YONGE STREET SITE

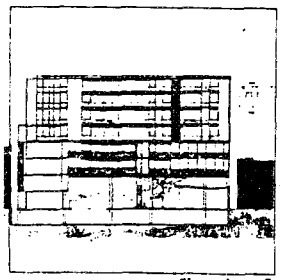
2



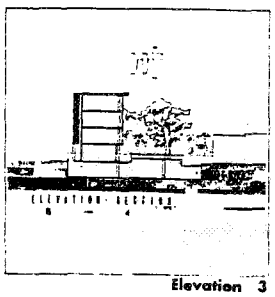
Front View



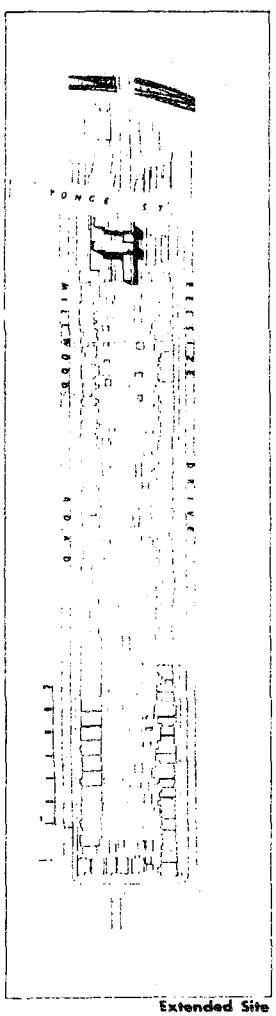
Elevation 1



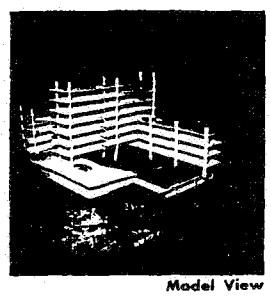
Elevation 2



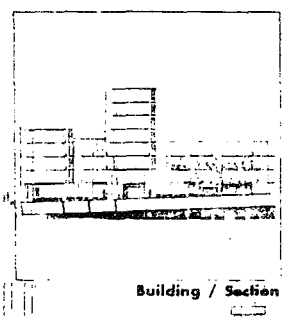
Elevation 3



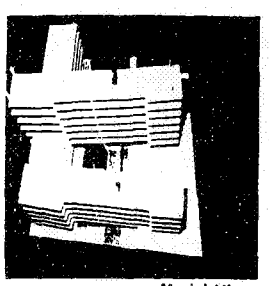
Extended Site



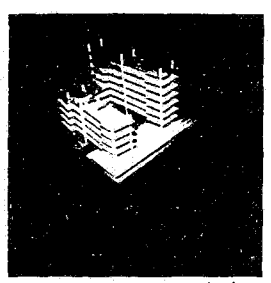
Model View



Building / Section

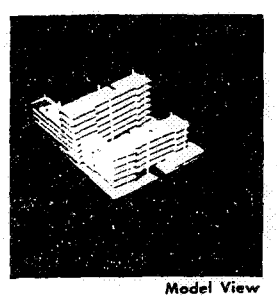


Model View

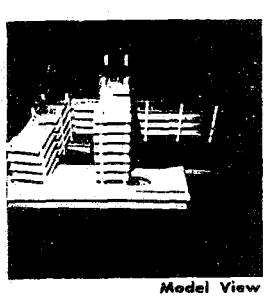


Model View

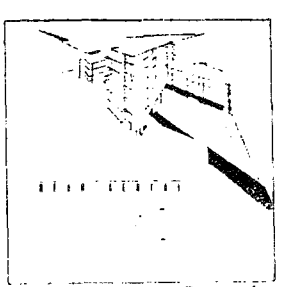
Streetscape



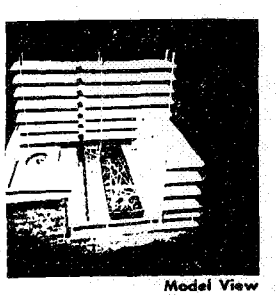
Model View



Model View



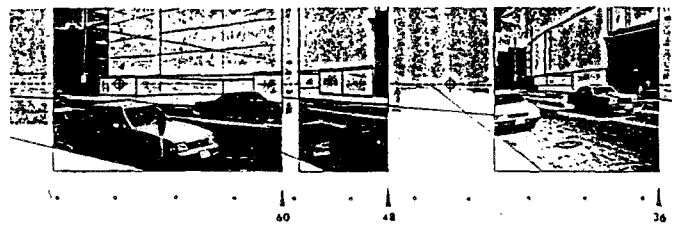
Perspective

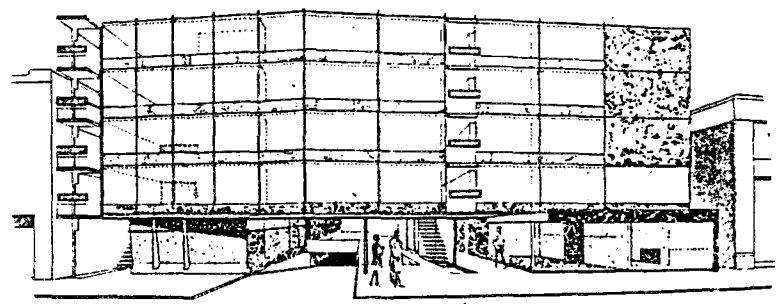


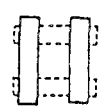
Model View

TORONTO MAIN STREETS

Offices Between Commercial and Residential



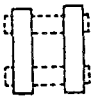


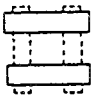


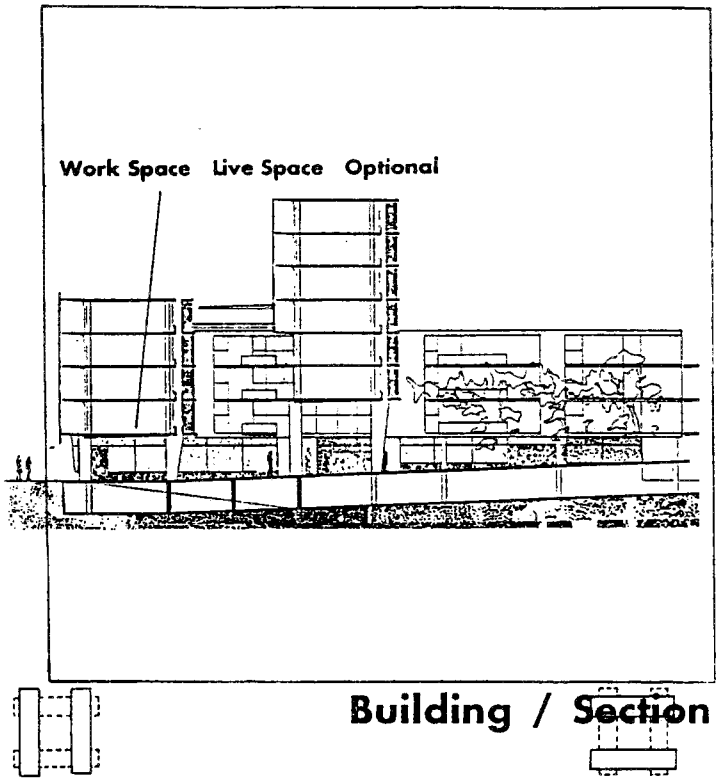
Front View

Building	A	B	C	Total
Studio			3	3
1 Bed	8		8	16
2 Bed	4	6		10
3 Bed			6	6
Total	12	6	17	35

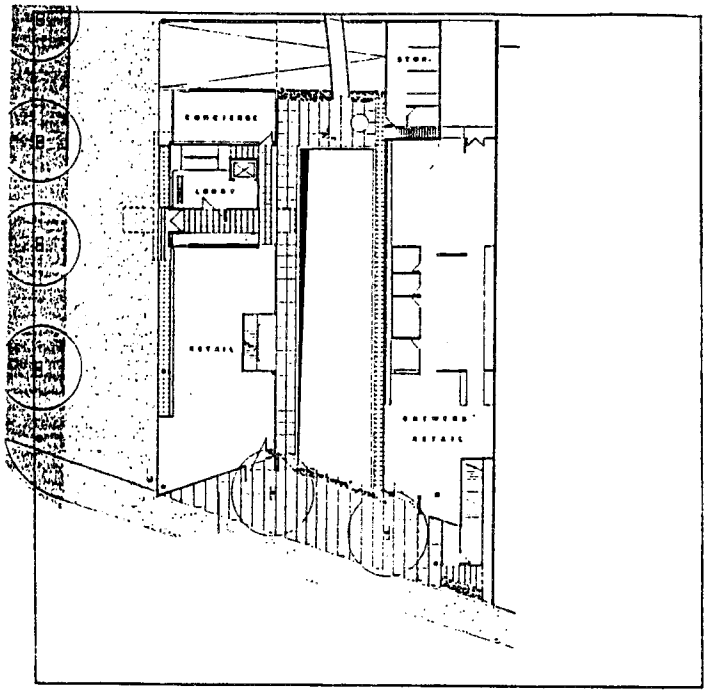
Residential Area	.....	4,550
Commercial Area	.....	360
Institutional Area	.....	360
GFA	.....	5,270 (2.7 coverage)



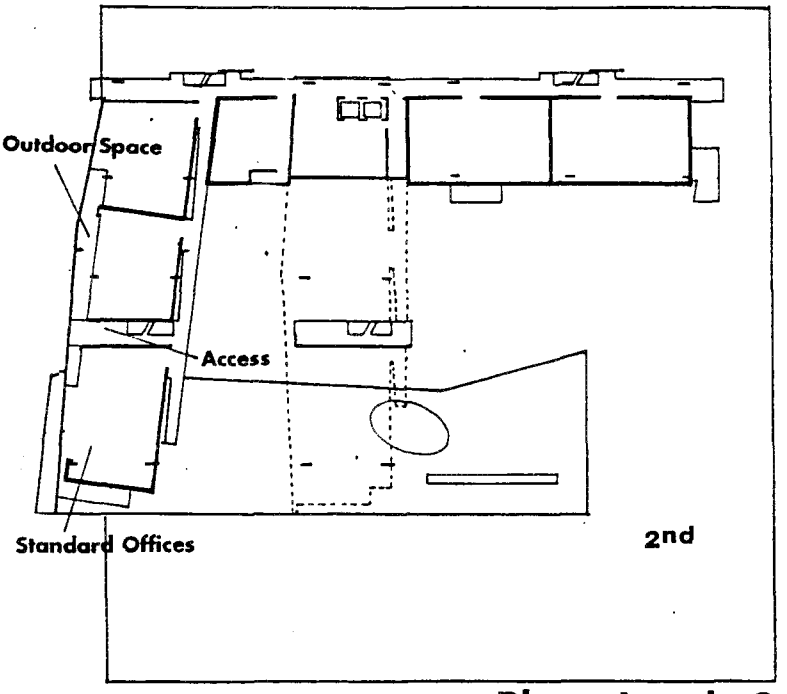




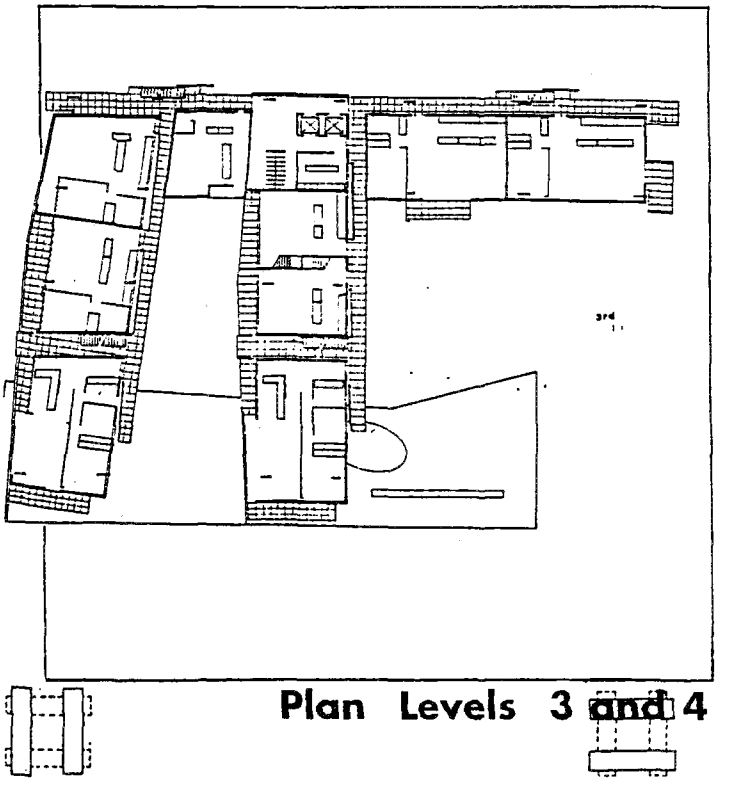
Building / Section



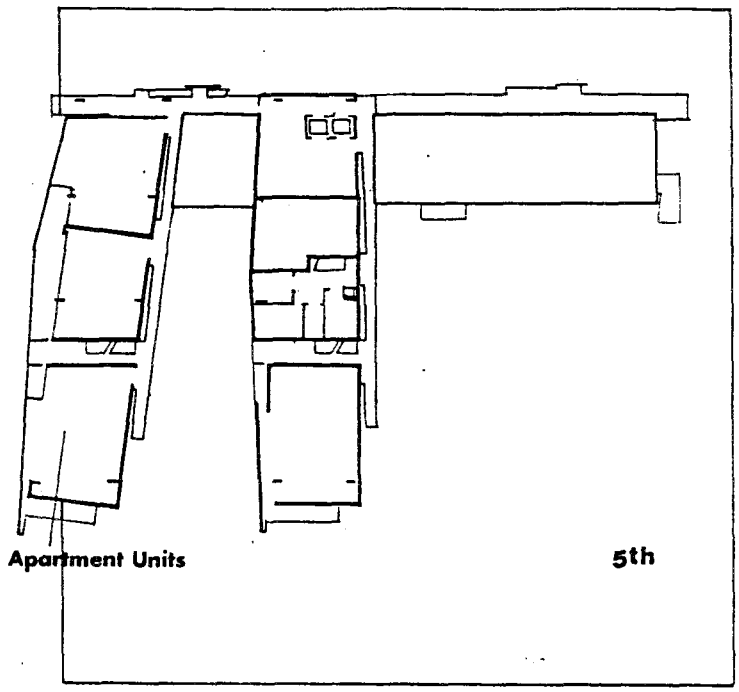
Ground Floor Prototype



Plan Level 2



Plan Levels 3 and 4



Plan Level 5

Case Study 4

Residential Regeneration
Pittsburgh Garfield Project

Architects: Brown and Storey Architects
58 Stewart Street,
Toronto, Ontario
Canada

The Garfield project design is tailored to redevelopment of a run down, inner city, working class area of Pittsburgh. The design includes four box-shaped buildings situated along Kincaid Street, each containing two apartments. The structure optimizes the location on a sloping hill site. Apartment units are simple, spacious and possess two principle views facing the street and the interior of the site. Units are terraced, providing outdoor areas. Kitchens and bathrooms allow light in and views out. Materials consist of concrete block walls, finished concrete floors and minimal interior partitions.

This allows the succession of residents to make changes to their living/work environment. For example, a single person occupying an apartment in one of the main buildings, could rent out a unit along Jordan Way or use it to operate a small business. The North Evaline Street structure contains a two story apartment, communal roof terrace and eight or nine office/work spaces which can be used by the occupants of the apartments along Kincaid Street. It provides the opportunity to live and work in close proximity or the possibility of extra rental income. A resident of an apartment on Kincaid may have a small studio or business located along North Evaline Street. In addition, nine scattered lots are located along Jordon Way which act as simple "portal spaces" alternatively using them as parking spaces, gardens or potential rental units depending on the need of the user.

"This is an affordable proposal due to the ability of living and working in one place, the ability to have rental income and due to the simple straightforward construction techniques ... The economic viability of the project is linked to the overall use of the site. The builders and the residents have the flexibility to utilize the site in a number of ways. This flexibility in ownership/tenure offers the best possibilities of living and occupying the site in order to live on a quiet street and work on a busy street. Residents can use the entire site in a variety of ways: house, terrace, office, rental suite, garden etc. It allows for the maximum economic and physical flexibility for one to evolve in one's home".

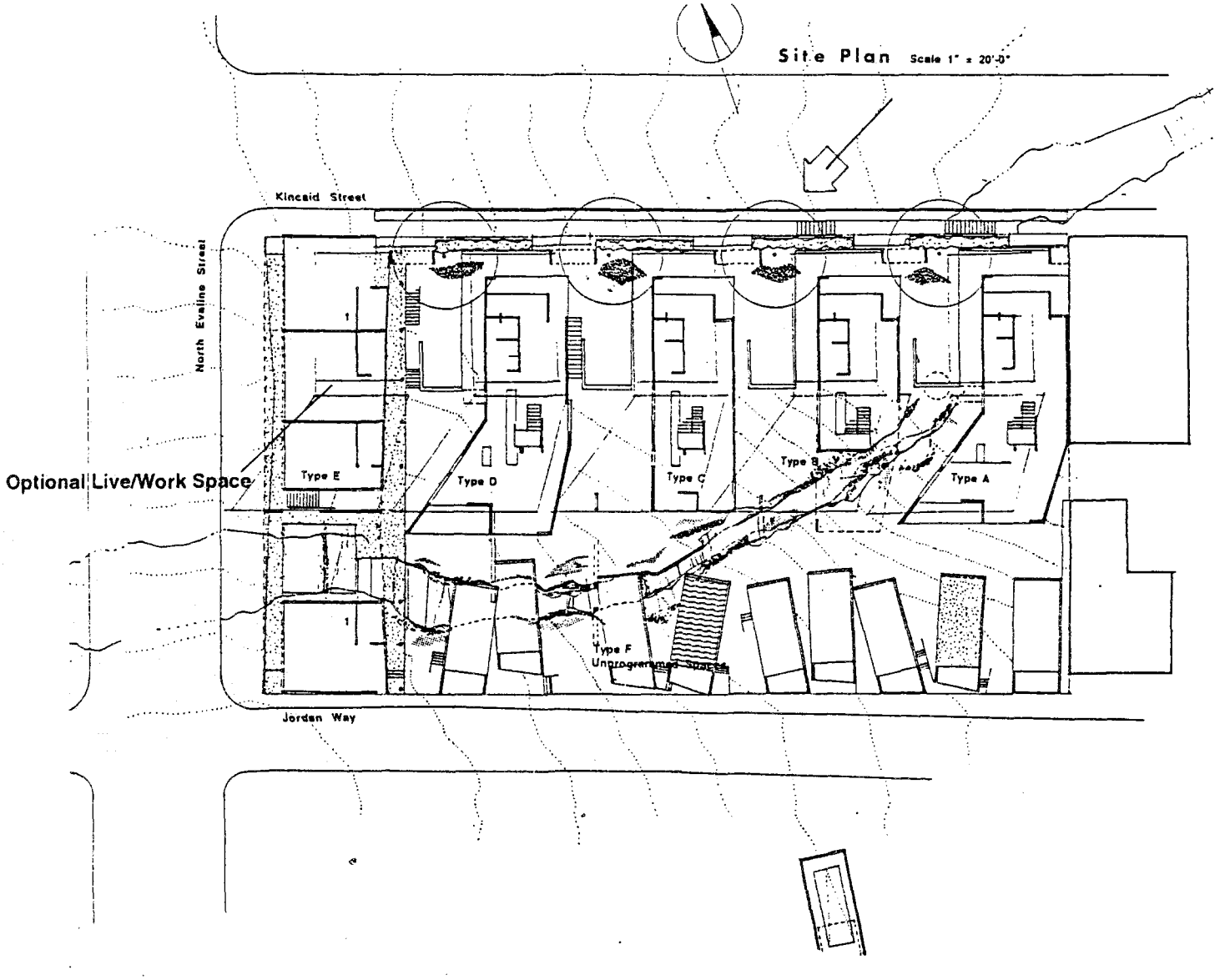
Square foot calculations are as follow:

A	Lower Unit	1660 square feet
	Upper Unit	1650 square feet
B	Lower Unit	1446 square feet
	Upper Unit	1435 square feet

C	Lower Unit	1446 square feet
	Upper Unit	1435 Square feet
D	Lower Unit	1660 square feet
	Upper unit	1650 square feet
E	Apartments	1516 square feet
	Offices	2860 square feet
F- N		Between 220 and 40 square feet depending on how lots develop over time.

Multiuse Residential Development

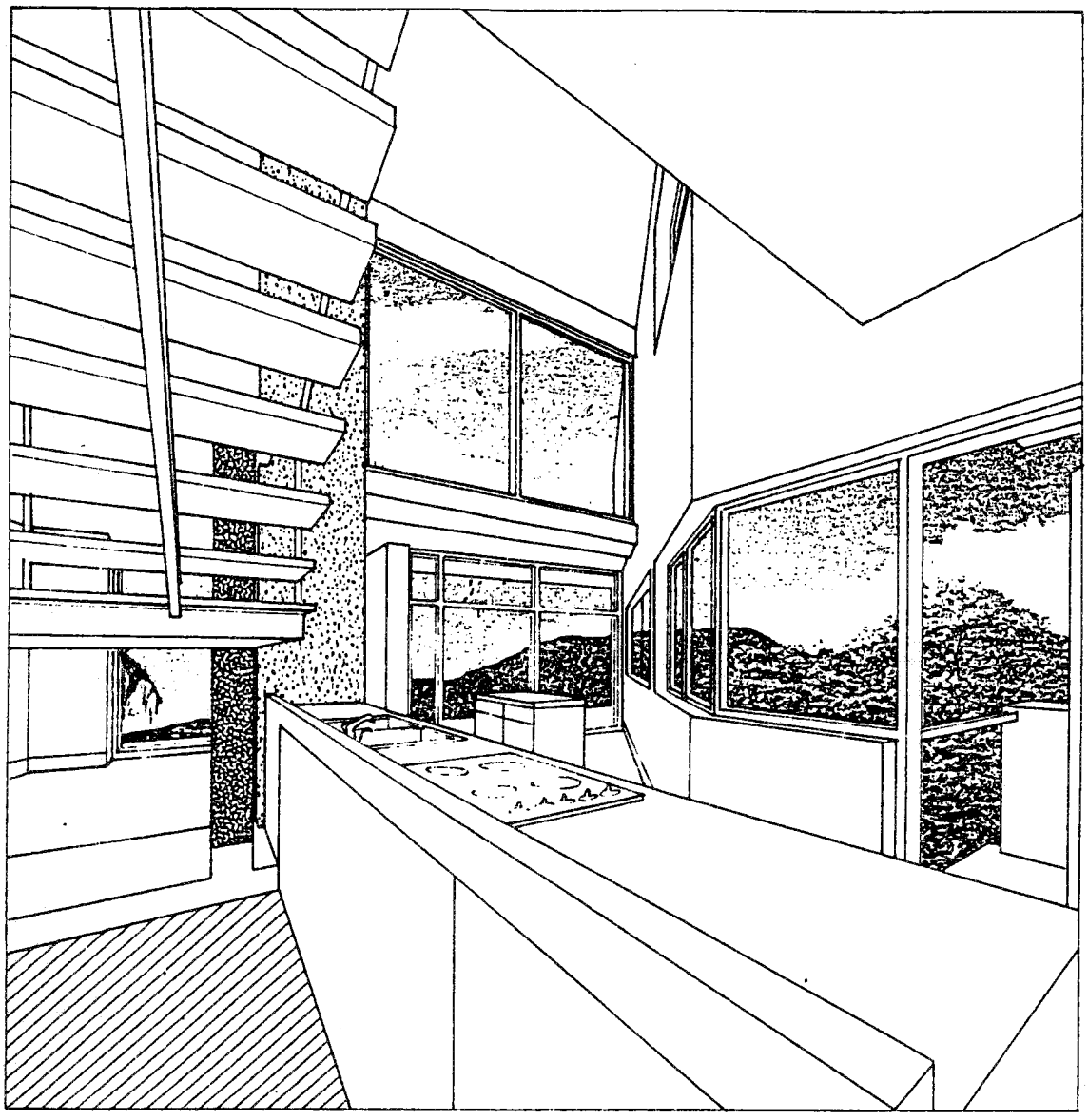
Project Title:	Pittsburgh New Housing Competition
Contact:	James Storey, Architect
Address:	Storey and Associates, 58 Stewart Street, Toronto
Building Type	**Location**
Mixed-use Apartments	Inner City, Redevelopment
Building Description:	• Five variations of residential/commercial space • Separate commercial/office space incorporated into design that can be used by tenants • Inner city redevelopment in "run down" residential area • Incorporating neighborhood small business centre
Design, Zoning, Code Issues:	• Project initiated by City of Pittsburg • City to work towards modifying required building code changes
	CASE: 4



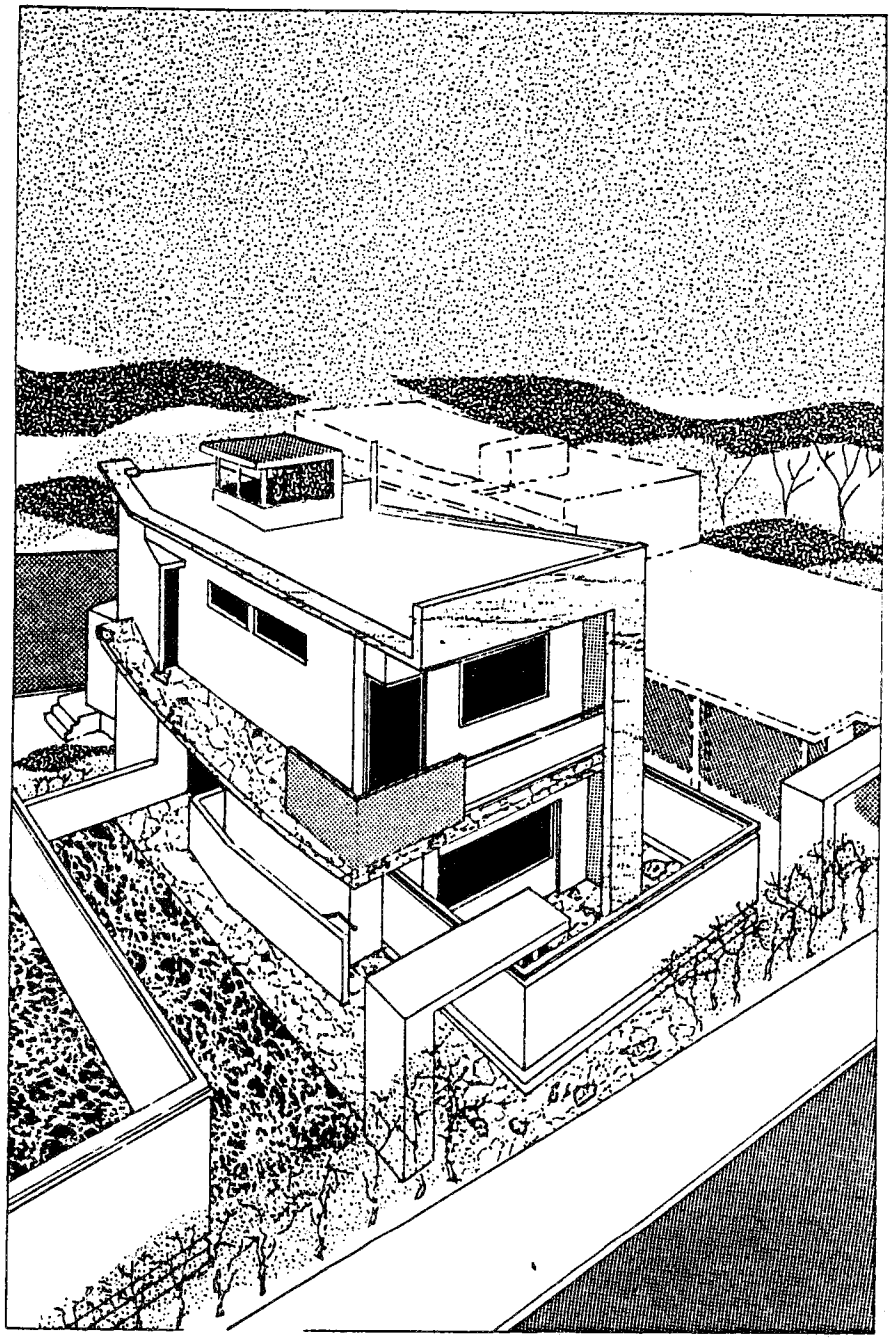
Street Level Plan

Live on a Quiet Street, Work on a Busy Street

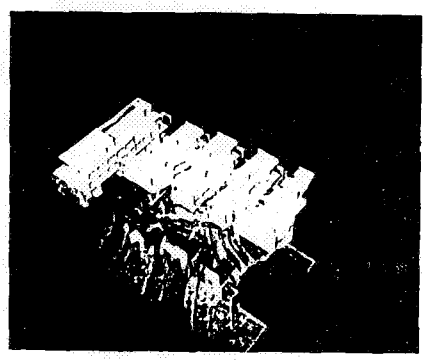
Neighbourhood Context



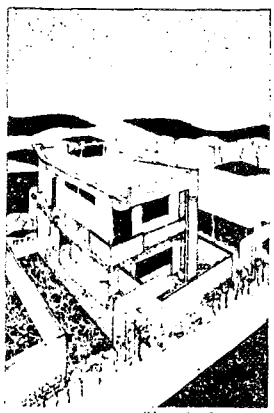
Interior Perspective



Kincaid Street Perspective

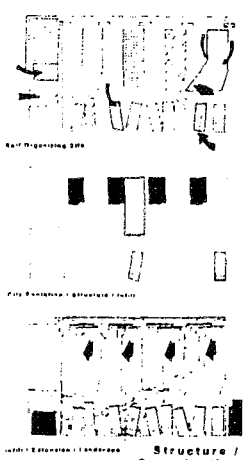


Model View

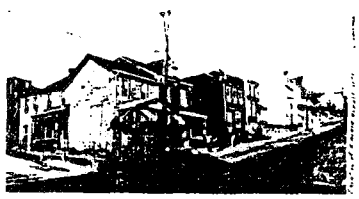


Kincaid Street Perspective

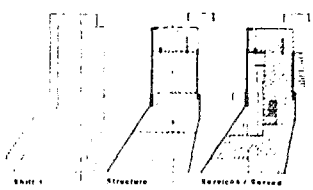
Model View

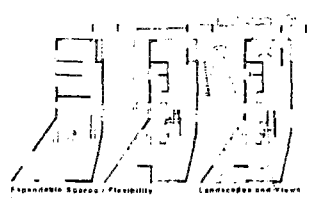


Structure / Organization

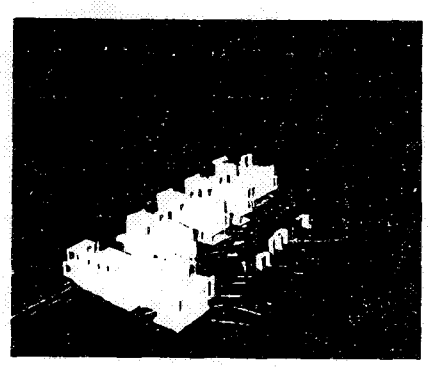


Neighbourhood Context

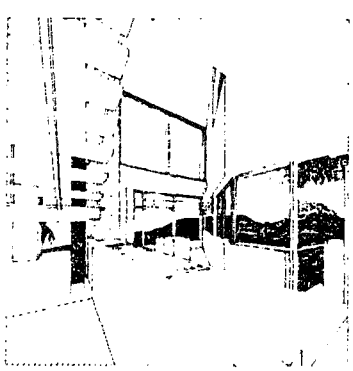




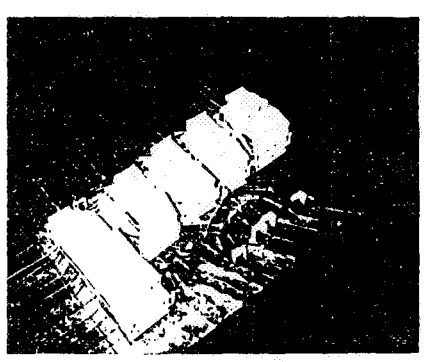
Analysis



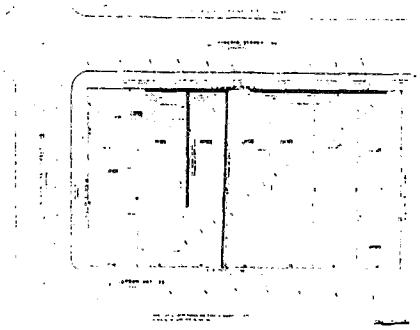
Model View



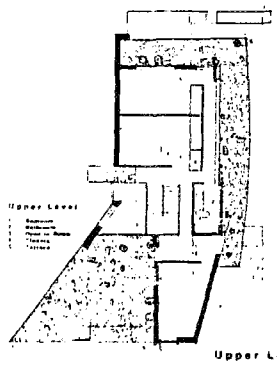
Interior Perspective



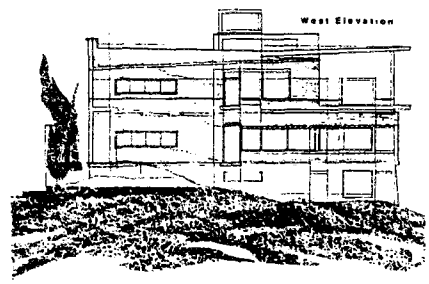
Model View



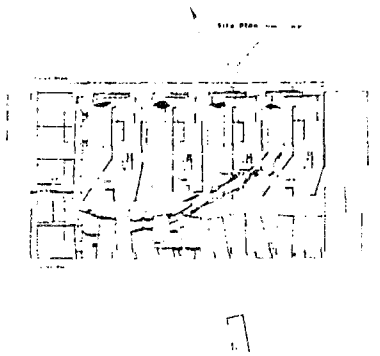
Existing Site Plan



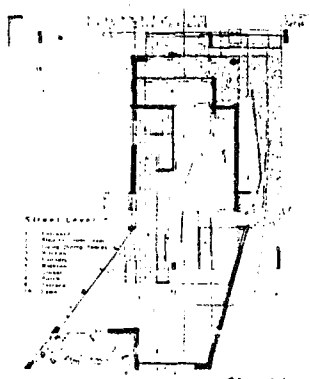
Upper Level Plan



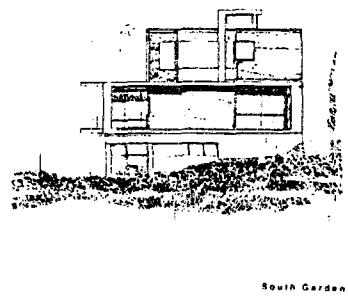
West Elevation



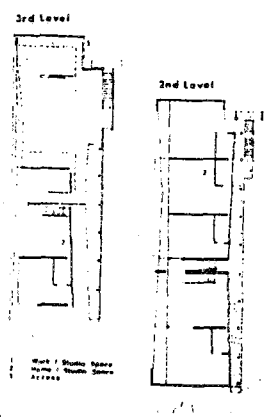
Street Level Plan



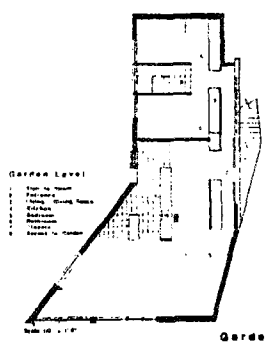
Street Level Plan



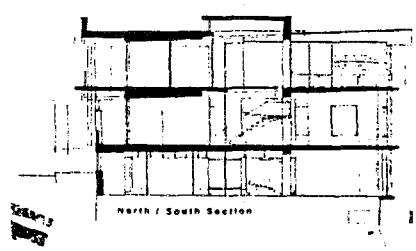
South Garden Site Elevation



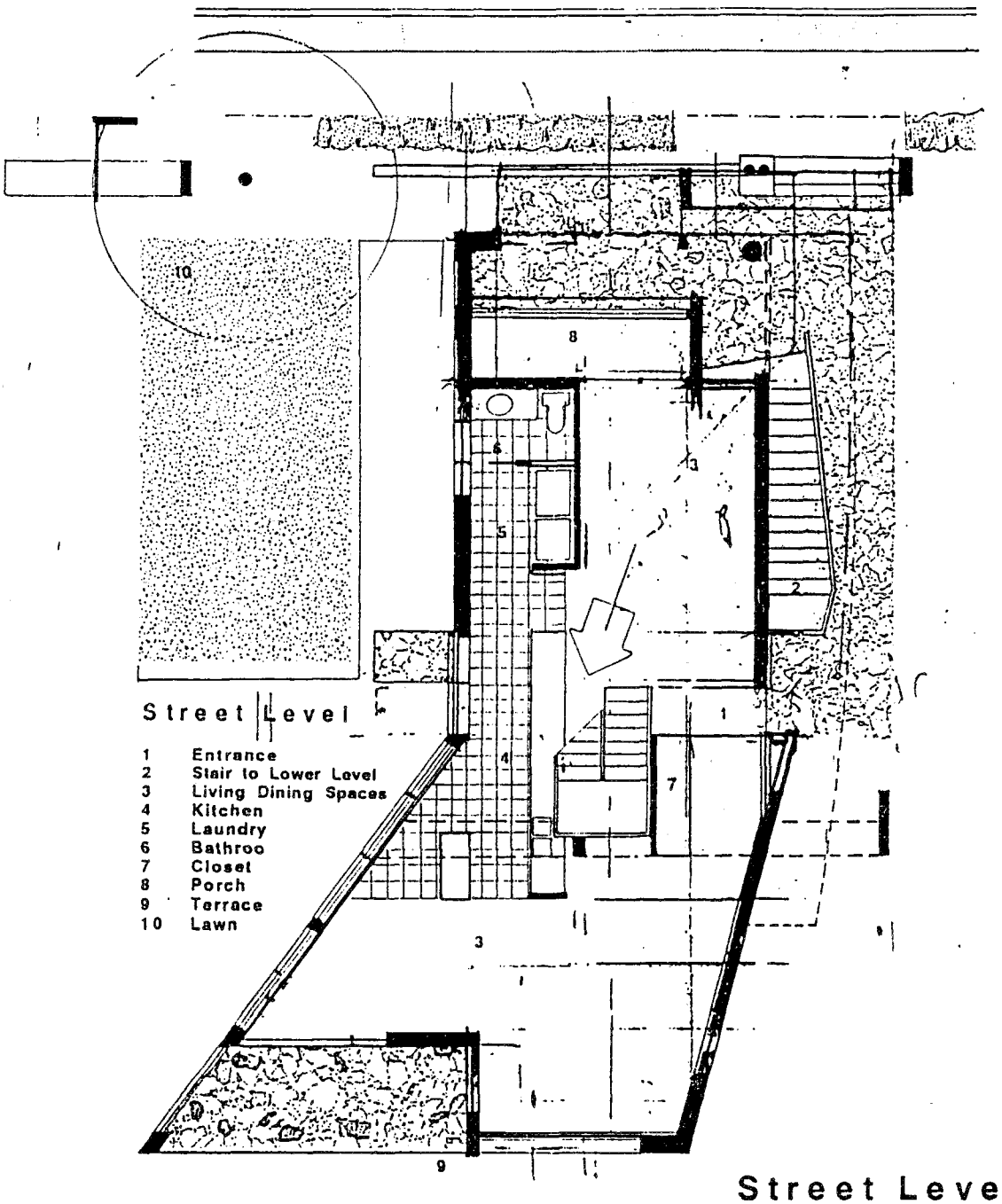
Home / Work Building



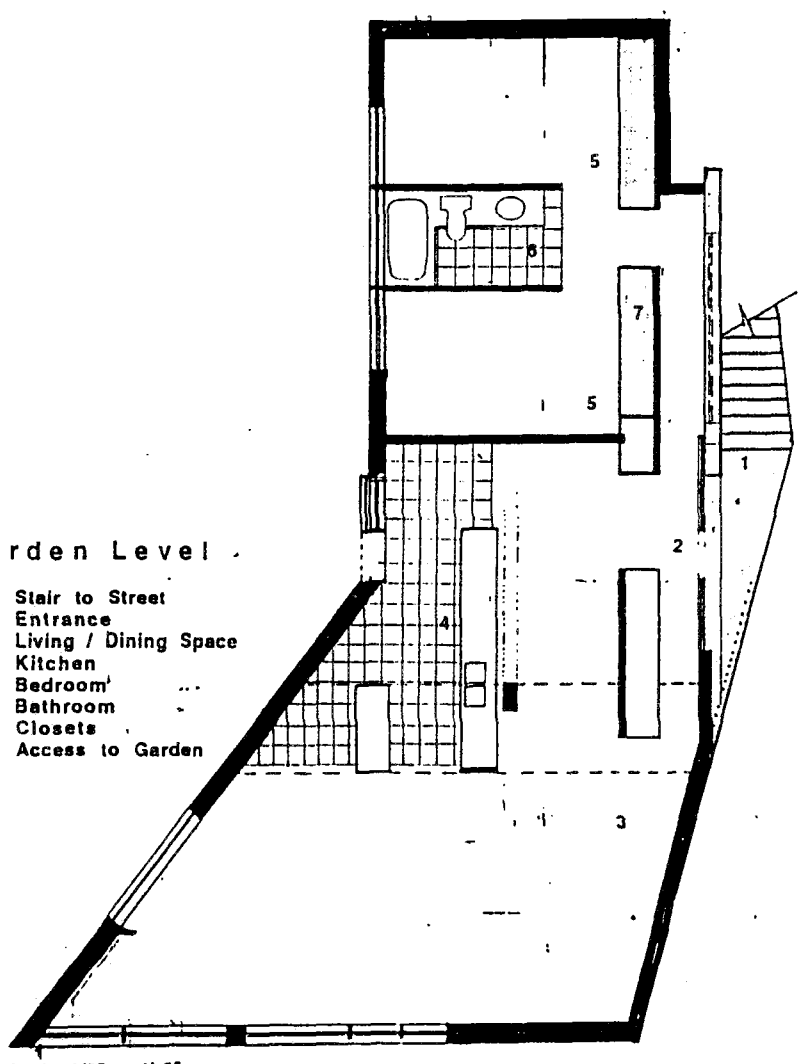
Garden Level Plan



North / South Section



Street Level Plan

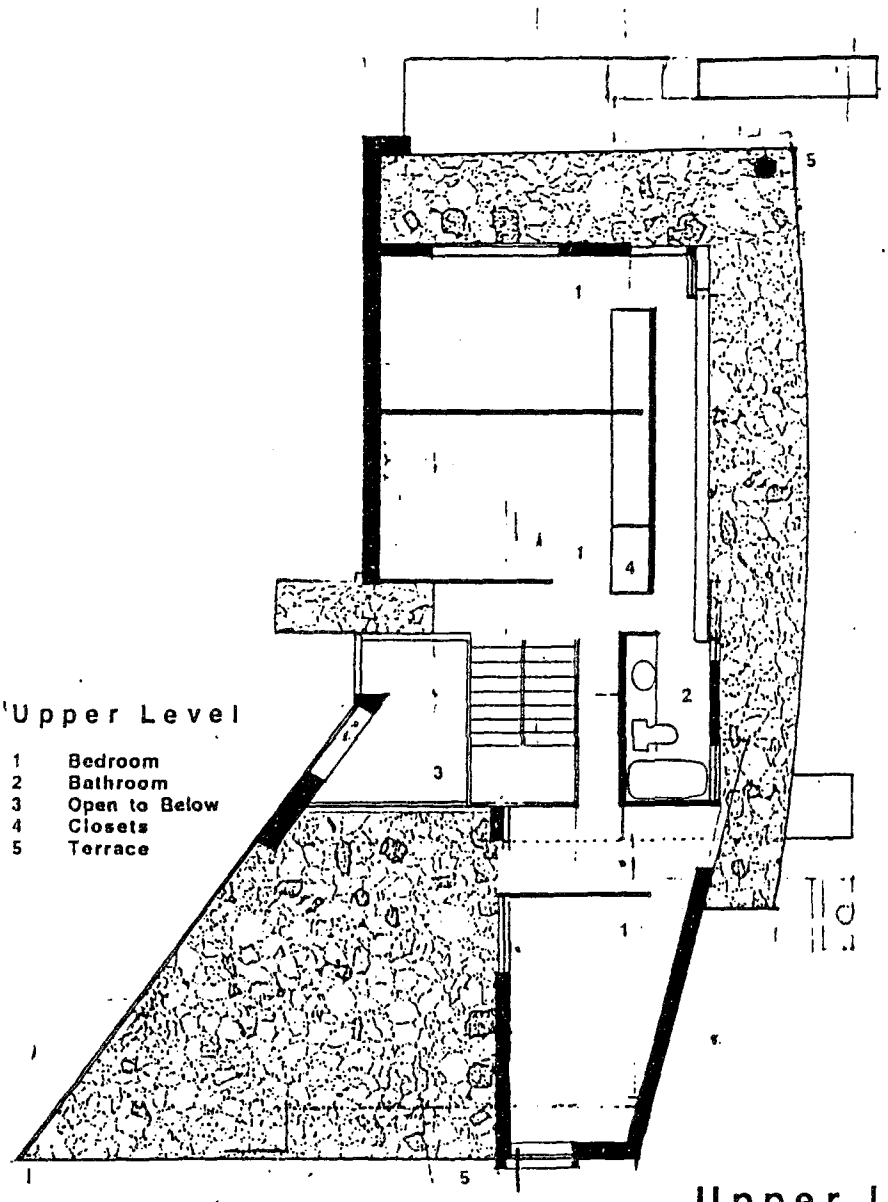


Garden Level

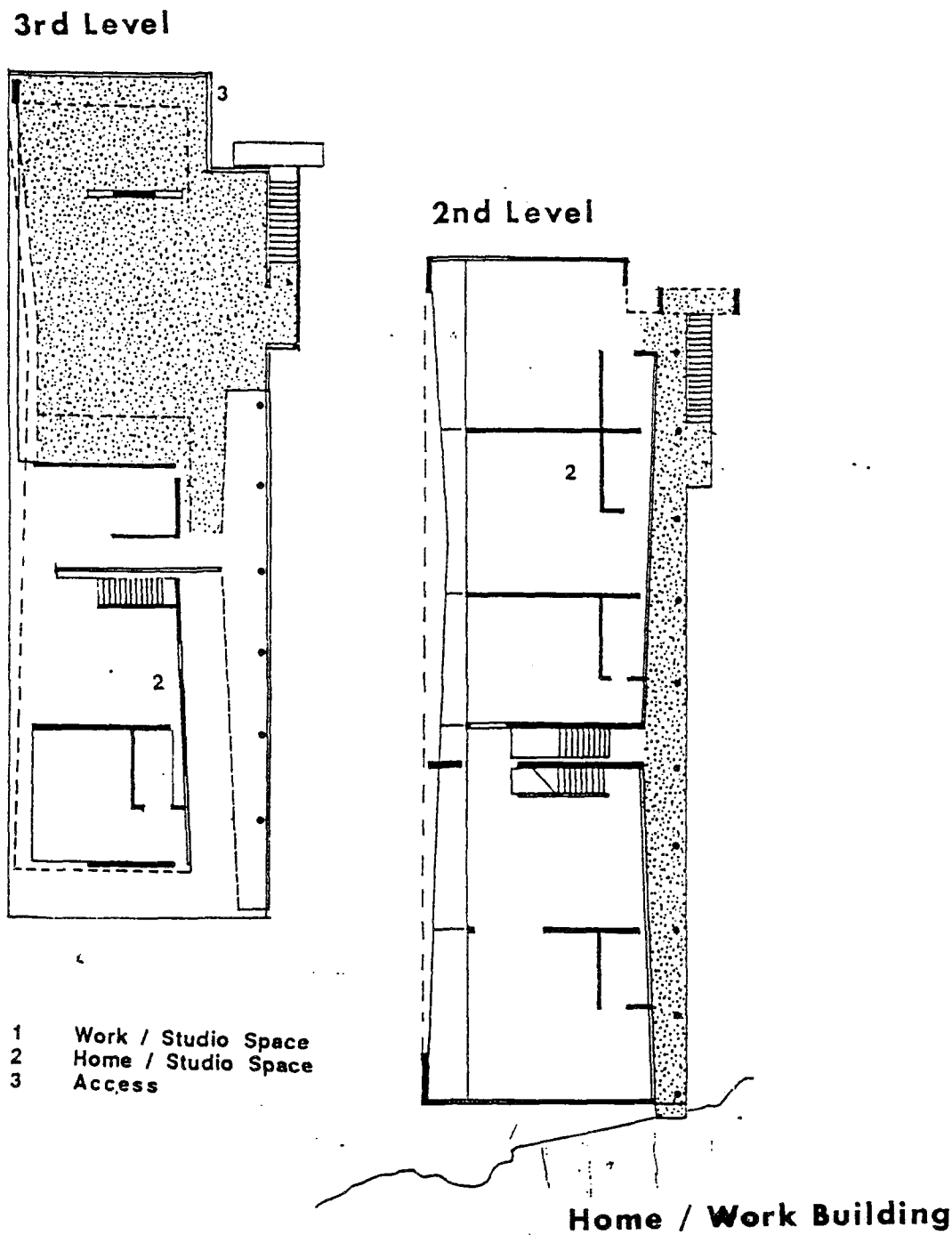
1 Stair to Street
2 Entrance
3 Living / Dining Space
4 Kitchen
5 Bedroom
6 Bathroom
7 Closets
8 Access to Garden

Scale 1/8" = 1'-0"

Garden Level Plan



Upper Level Plan


3rd Level
3
2
2nd Level
2
1 Work / Studio Space
2 Home / Studio Space
3 Access
Home / Work Building

New Urban Housing for Garfield

The Community Design Centre of Pittsburgh

DESIGN APPROACH

The Evolving Nature of Living in Garfield

The design approach for this proposal emphasizes the interplay between each of its three components: the users, the built form and the site. Each component by nature is dynamic. The needs and interests of the residents, the local community and the owners/ developers are continuously evolving as are the the site, the dwelling units, open space, communal space and environmental considerations. Our proposal is to allow this evolution and flexibility within an affordable framework.

1. The Evolution of the Users, the Built Form and the Site

Users: People's lives change. At times in their lives they live alone, live with others, age and go through a series of economic changes. We also change the nature of our lives during the daily cycle, and through the seasons of the year. The challenge for us was to provide a framework within which this evolution can take place.

Housing: This proposal allows the building owner as well as the future residents to use the site in a variety of ways. The dwelling units and the site are considered as "works in progress" where the creative energy that went into designing the spaces can be kept alive and passed on to the owners and future residents to help shape and reshape it as need be.

The design can foster social integration through the creation of collective spaces. The specific arrangement and use of these spaces involve the people who live there.

Site and Environment: In contrast to the existing abandoned condition of the site, we have established a new trajectory or hollow that cuts through parts of the site strata revealing a positive pole of attraction.

This lush green gorge offers a special world of vegetation and value to the site. It is intended to grow and modify itself through the normal course of natural and man-made forces.

Rather than imposing a rigid order of landscape and vegetation across the entire site we have limited the formal organization of the site to the Kincaid Street edge. The greening of the remainder of the site can be organized by the residents over time.

2. The Proposal: The Inter-relationship Between the Users, Architecture and Site:

Houses along Kincaid Street: Four box-shaped buildings situated along Kincaid Street each contain two apartments. The structure has been optimized to work with a sloping hill site. It consists of formed concrete bearing walls that create a void in which the residential box is located. The foundation itself creates the living space sculpted out of the site. The house can therefore be seen as an integral physical component of the site.

The apartment units are intentionally spacious, simple and possess two principle views facing the street and the interior of the site. They are essentially open spaces which frame views to the lower areas within the

DESIGN TEAM

Brown and Storey Architects
58 Stewart Street
Toronto, Ontario
Canada, M5V 1H6

Tel: (416) 368-2759
Fax: (416) 368-3105

James Brown
Kim Storey

Mark Sterling
Charles Beamish
Lorne Cappe

house and the site. These areas are terraced, providing individual outdoor areas. Kitchens and bathrooms have been positioned to allow light in and views out. Materials consist of concrete block walls, finished concrete floors and minimal interior partitions This allows the succession of residents to alter their environment as they see fit.

For example this flexibility could allow for the following scenario. A single person occupying an apartment in one of the main buildings could rent out a unit along Jordan Way in order to acquire additional income for the establishment of a small business located along North Evaline Street. As this person's lifestyle changes (perhaps has a family, retires, etc) his needs can continue to be met on the site in a number of ways. There are a multitude of scenarios that can be similarly accommodated on the site. This allows families the ability to grow and continue to live on the site, continuing to be part of the local community.

Live/Work Space along North Evaline Street: A structure running along North Evaline Street contains a two-storey apartment , a communal roof terrace and eight or nine office/work spaces which can be used by the occupants of the apartments along Kincaid Street. It provides them with the opportunity of living and working within close proximity or the possibility of extra rental income. A resident of an apartment on Kincaid may have a small studio or business located along North Evaline Street.

Unprogrammed Sites along Jordan Way: In addition, nine scattered lots are located along Jordon Way which act as simple portal spaces alternately used as parking spaces, gardens or potential rental units depending on the need of the user. This arrangement also allows the owners of the property to rent or sell the site in a variety of methods.

3. Affordability

This is an affordable proposal due to the ability of living and working in one place, the ability to have rental income and due to the simple and straightforward construction techniques.

The optimization of the structure is achieved through a simple concrete construction with exterior walls finished alternately with wood, stucco and stone set in forms. The floors are poured concrete.

This form of construction offers the best sound insulation, and strongest deterrent to pests and rodents otherwise found in stick construction methods. The intent is to use the greatest number of pre-fabricated materials for staircases, windows, standard metal sheeting and roofs. In addition, the construction method involves the use of reusable standard steel forms.

The Overall Use of the Site: The economic viability of the project is also linked to the overall use of the site. The builders and the residents have the flexibility to utilize the site in a number of ways. This flexibility in ownership/tenure offers the best possibilities of living and occupying the site in order to live on a quiet street and work on a busy street. Residents can use the entire site in a variety of ways: house, terrace, office, rental suite, garden, etc. It allows for the maximum economic and physical flexibility for one to evolve in one's home.

SQUARE FOOT CALCULATIONS

BUILDING	*FLOOR AREA*
A	
Lower Unit	1660 square feet
Upper Unit	1650 square feet
B	
Lower Unit	1446 square feet
Upper Unit	1435 square feet
C	
Lower Unit	1446 square feet
Upper Unit	1435 square feet
D	
Lower Unit	1660 square feet
Upper Unit	1650 square feet
E	
Apartment Unit	1516 square feet
Offices	2860 square feet
F through N Possible Building	Between 220 and 40 square feet depending on how these lots develop over time

Case Study 5

Inner City Main Street Design
Dundas Ossington Site

Architects: Brown and Storey Architects
James Brown
Kim Storey
58 Stewart Street
Toronto, Ontario
Canada

The design project is located in a dense, ethnic neighborhood of Toronto with congested commercial street level activity. There are three related sites around a new public square. Public transportation is easily accessible. Court yard space and the vertical tower structure provide opportunity to escape the congested street activity while still being apart of the community.

The project allowed the design team the opportunity to "conceptualize a new model for living and working in the city influencing a mainstream lifestyle/culture." Target groups for occupancy single persons and small business owners conducting a business and wishing to reduce taxes from two premises (commercial and residential).

The tower component of each of the buildings provides optional (1 floor) office or combined (2 floor) apartment/work space options. The tower is connected to the linear apartment blocks below allowing individuals to live on the street, and yet have separate space within the building. Average square footage of the designated work space is 600 square feet of residence and 400 square feet of work space. The tower is connected to the linear apartment blocks below, allowing individuals to live on the street and yet have separate space within the building. Design includes a small gallery and cultural facility.

The architect notes that while the idea of mixed-use development is gaining attention in the design community, builders/developers have not yet responded to the market opportunity to accommodate the emerging lifestyle.

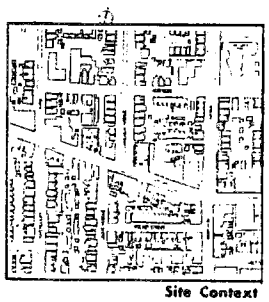
Multiuse Residential Development

Project Title:	Dundas Ossington site	
Contact:	James Storey	
Address:	Storey and Associates, 58 Stewart Street, Toronto	
Building Type	**Location** Inner City, Toronto	**Stage of Completion/Vacancy Rate** Design Competition
Building Description:	• Downtown, mixed-use tower • Tower corner concept based on historic corner store type • 2 storey apartment/work space	
Design, Zoning, Code Issues:	• Competition only	
		CASE: 5

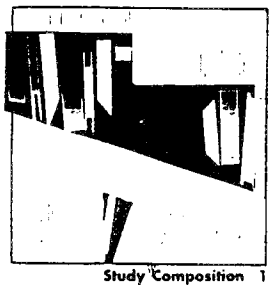
DUNDAS OSSINGTON SITE

1

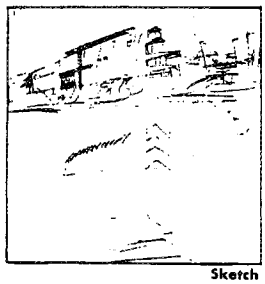
Aerial View



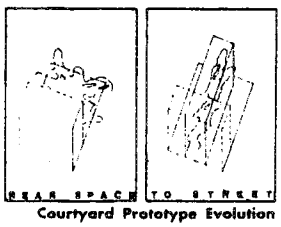
Site Context



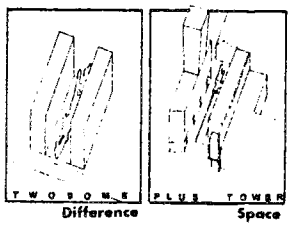
Study Composition 1



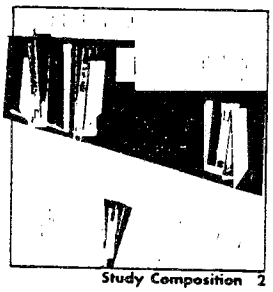
Sketch



Courtyard Prototype Evolution

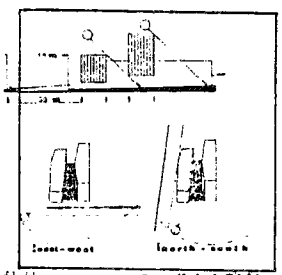


Difference Space

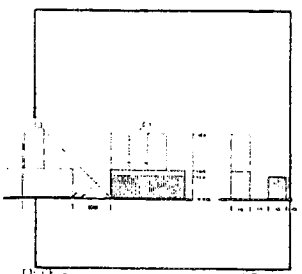


Study Composition 2

Historical Corner Type



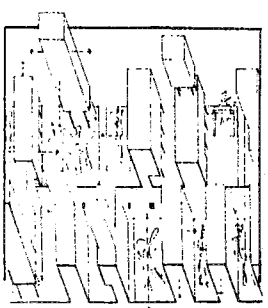
Parallel / Twins



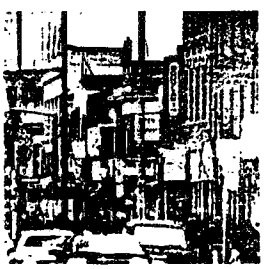
Street Section / Scale / Form

Study Composition 3

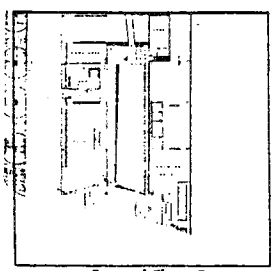
Corner Tower Precedent



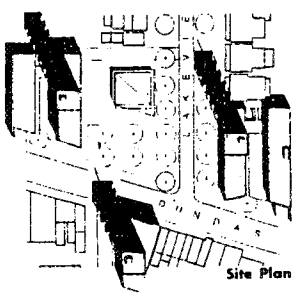
Continuous Discontinuities



Streetscape



Ground Floor Prototype



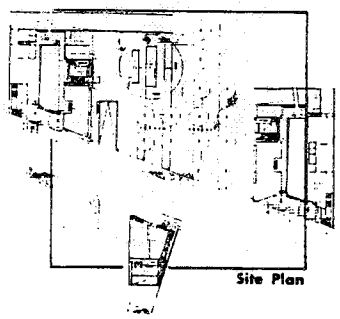
Site Plan

TORONTO MAIN STREETS

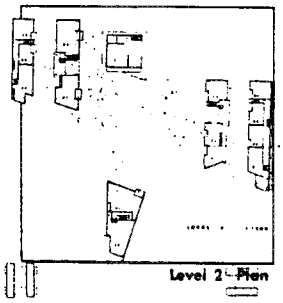
TOWER / HOME ENTERPRISE

DUNDAS OSSINGTON SITE

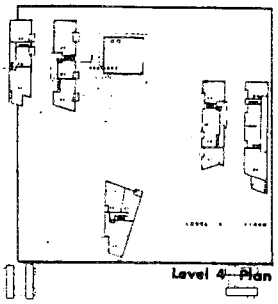
2



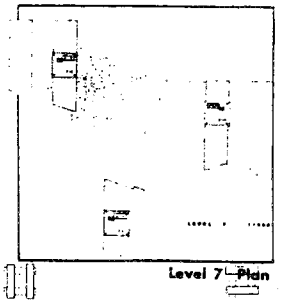
Site Plan



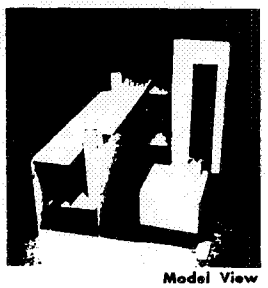
Level 2 Plan



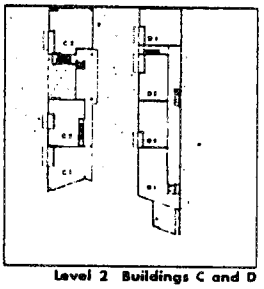
Level 4 Plan



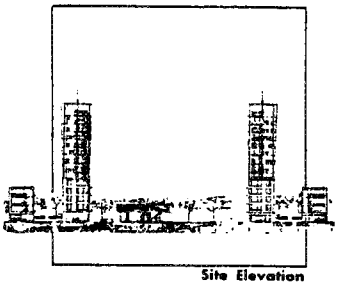
Level 7 Plan



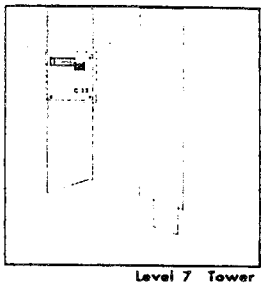
Model View



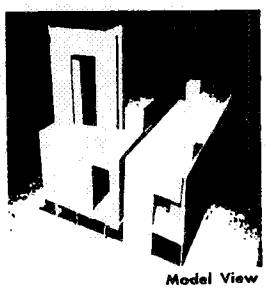
Level 2 Buildings C and D



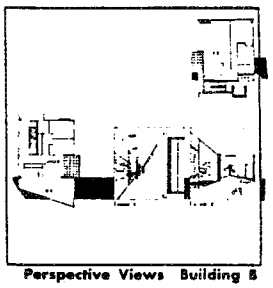
Site Elevation



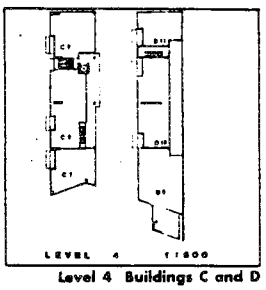
Level 7 Tower



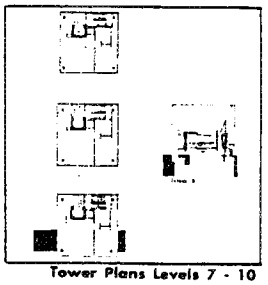
Model View



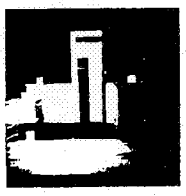
Perspective Views Building B



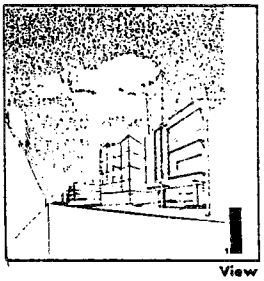
Level 4 Buildings C and D



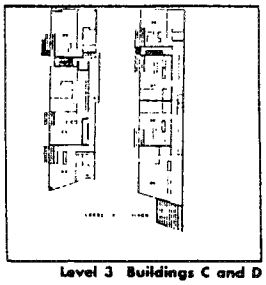
Tower Plans Levels 7 - 10



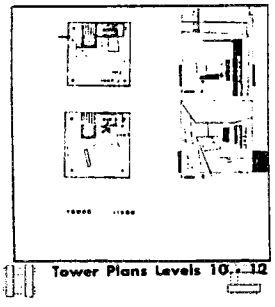
Model View



View



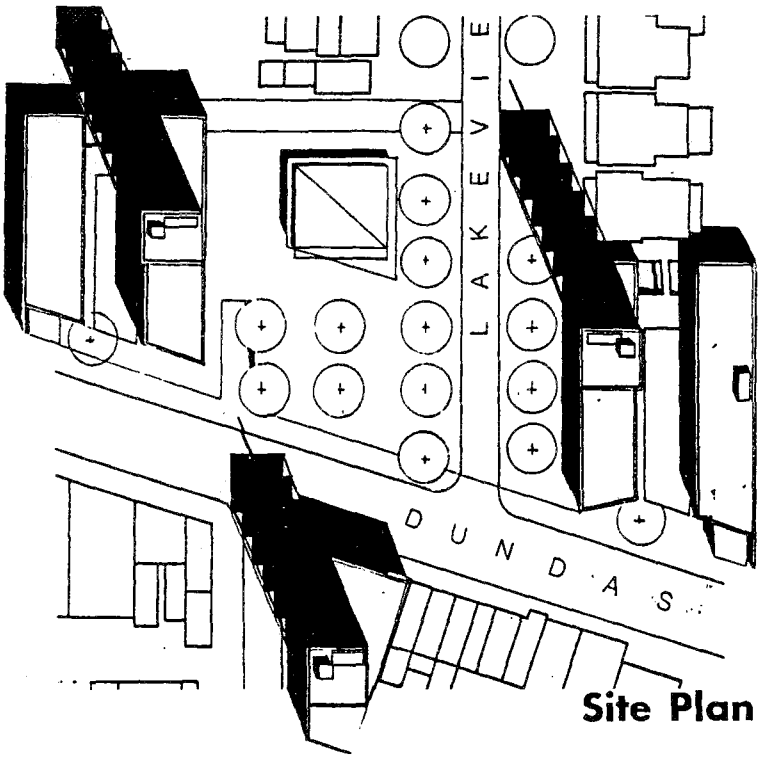
Level 3 Buildings C and D



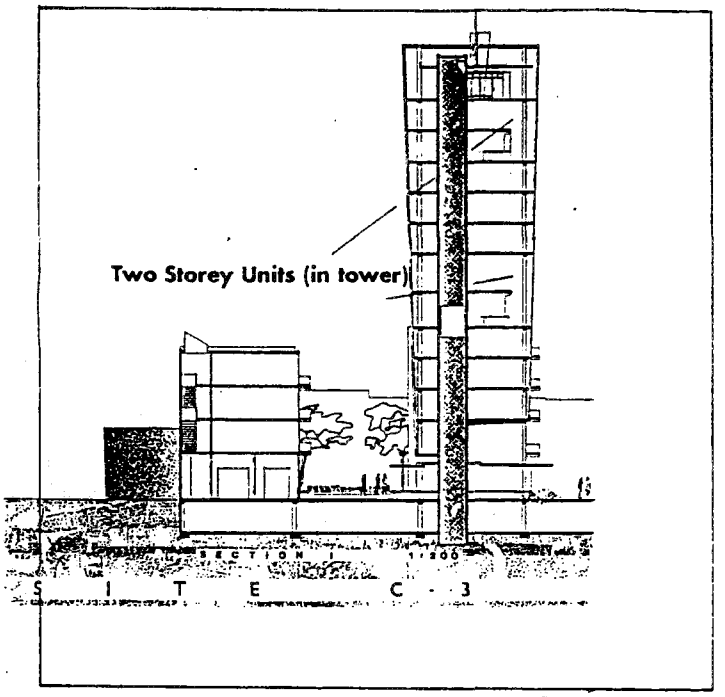
Tower Plans Levels 10 - 12

TORONTO MAIN STREETS

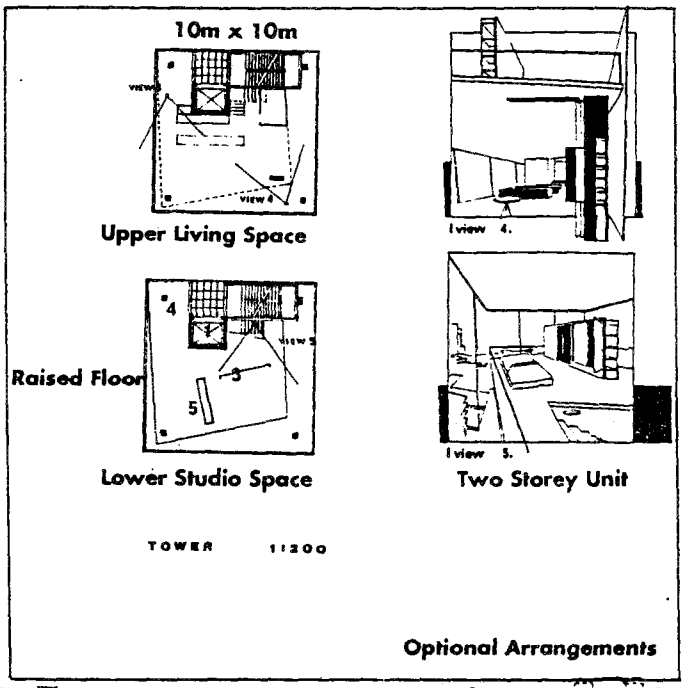
TOWER / HOME ENTERPRISE



Site Plan

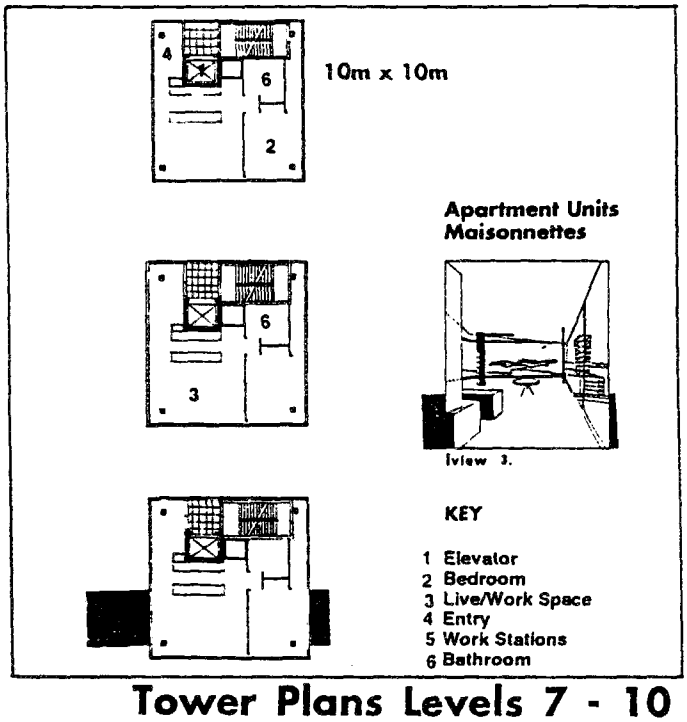


Courtyard Section



Tower Plans Levels 10 - 12

Tower / Home Enterprise



Tower Plans Levels 7 - 10

Tower / Home Enterprise

Case Study 6

Subsidized Mixed-use Development
Venice Renaissance, California

Contact: Jeff Lee
Harlan Lee & Associates
310 Washington Street
Marina del Ray, California
90292

The completed development is situated on a previously vacant railway spur, initially zoned R-3 allowing for multifamily residential development. The completed project includes: 26,000 square feet of retail space, 66 condo units with market values of $240,000 to $500,000, and 23 low income subsidized and senior residential units. The development is in close proximity to the area beach, public transportation and full commercial and community facilities.

Entitlements to rezone from multifamily residential to mixed-use required at least 15 changes to existing building codes including a height variance, parking variance, 14 public discretionary hearings, and the evolution of a advocacy seniors group to lobby for by-law and code modifications. To win public approval for the project the development includes 23 subsidized seniors units as a major concern for the community was losing low cost housing for senior residents of the community.

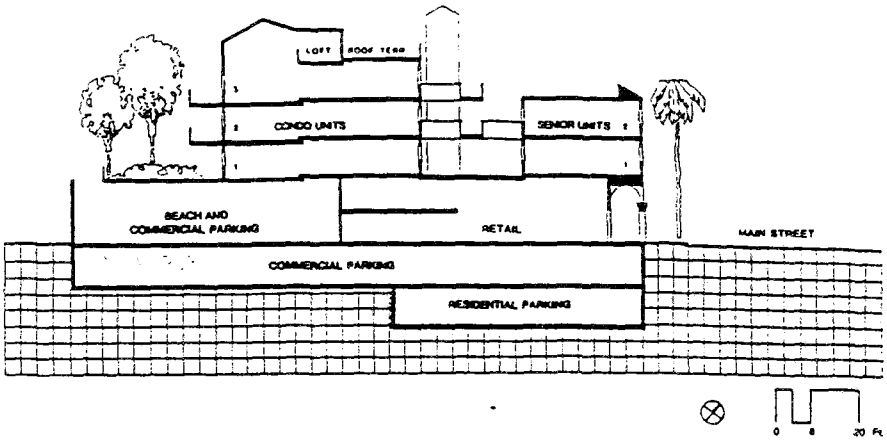
The hybrid design is made up of three triangular buildings connected by open air-ways. Two of the triangular open spaces provide an ocean view. While no specific home office amenities were furnished in the development all units were allocated home work space. Residential units are build through five basic plans with nine variations in total. The ground level provides retail footage of 26,000 square feet of leased space with 474 parking spaces provided one level grade below.

Noted household composition includes professionals primarily in real estate, law and the entertainment business, including body building as the area in noted for gyms (5 % households).

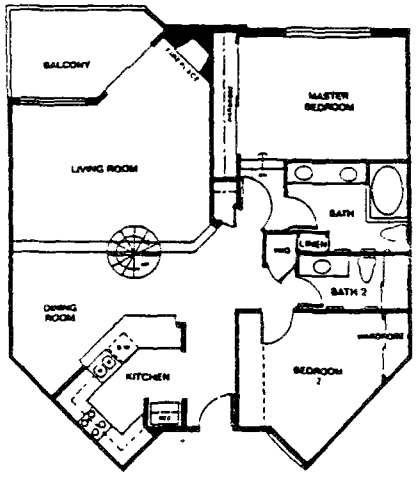
Notable features of this case study are: the multi-use nature of the design, the negotiated development program with the Venice community (e.g. seniors' units) and subsidized units for the elderly.

Multiuse Residential Development

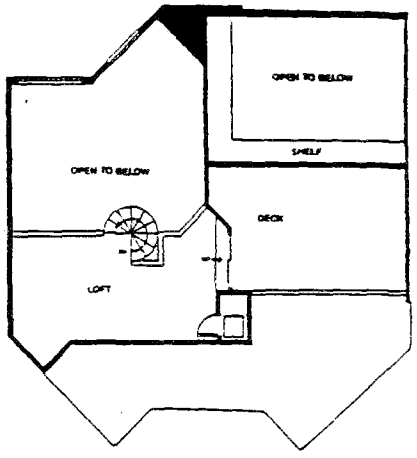
Project Title:	Venice Renaissance Project	
Contact:	Jeff Lee	
Address:	310 Wellington Street, Marina del Ray, California 90292	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
	Urban, California Coastline	Complete, Full Occupancy, 1989
Building Description:	• 26,000 retail sq. ft.; 66 condos, 23 low income residential units; 140,000 leasable sq. ft. (enough for 2 restaurants and 10-15 smaller tenants) • Ground level (public/private) parking • Proximity - located in residential area near beach front • Residents include mix of age groups, primarily professionals, body builders, real estate agents, many single tenants	
Design, Zoning, Code Issues:	• Numerous building code and municipal by-law revisions. Worked in community to adapt coding; awarded bonus variances • Support provided by local community group	
	CASE: 6	



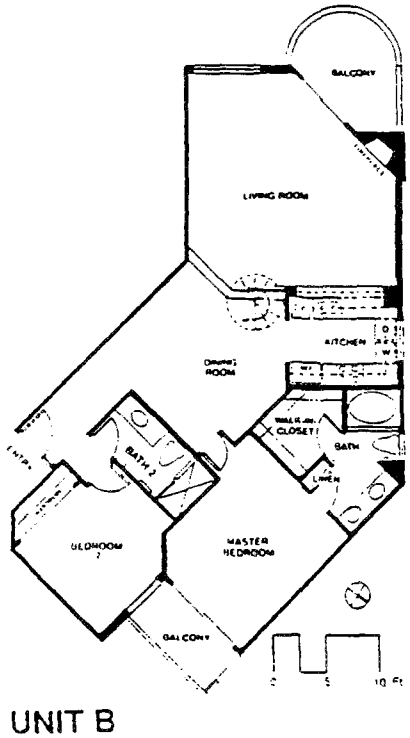
Uses are separated vertically; locating the residential atop the parking structure and street-level commercial enhanced security and opened up ocean views for most of the condominium units.



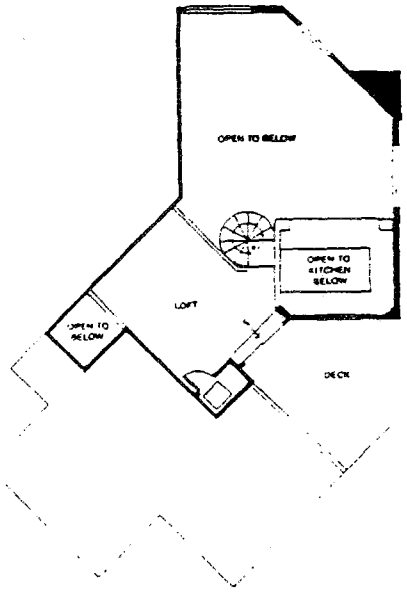
UNIT A



UNIT A LOFT



UNIT B



UNIT B LOFT

The apex of the triangular buildings is formed by a Plan A condominium. Approximately half of the total units are comprised of Plan B condominiums, which form the sides of the triangle.

Palm trees are used extensively in common open spaces because they provide height without blocking light and views, and because of their shallow root system. This pool area is located above the parking garage.

The contemporary Mediterranean architecture is reinforced with clay tile roofs and a dramatic arcade that covers the Main Street storefronts.

The columns, ornate capitals, and arches that form the arcade are consistent with the architectural intentions established for Venice when it was founded in the early 20th century.

Case Study 7

Dayton Court Development
St. Paul, Minneapolis

Contact: Harvey Sherman
Home-based Architecture and Development
89 North MacKubin Street
St. Paul, Minneapolis

Architects Troy West and Jacqueline Leavitt
Wakefield, R.I.

The development was the award winning design for A New American House Competition, cosponsored by the Minneapolis College of Art and Design, the National Endowment for the Arts, and Design Arts Program. The development consists of 14 townhouses which met competitive design specification for households including a studio or workspace for one member of the household who might work at home. The development was selected from 345 competitive entries all of which included a home work component in their design.

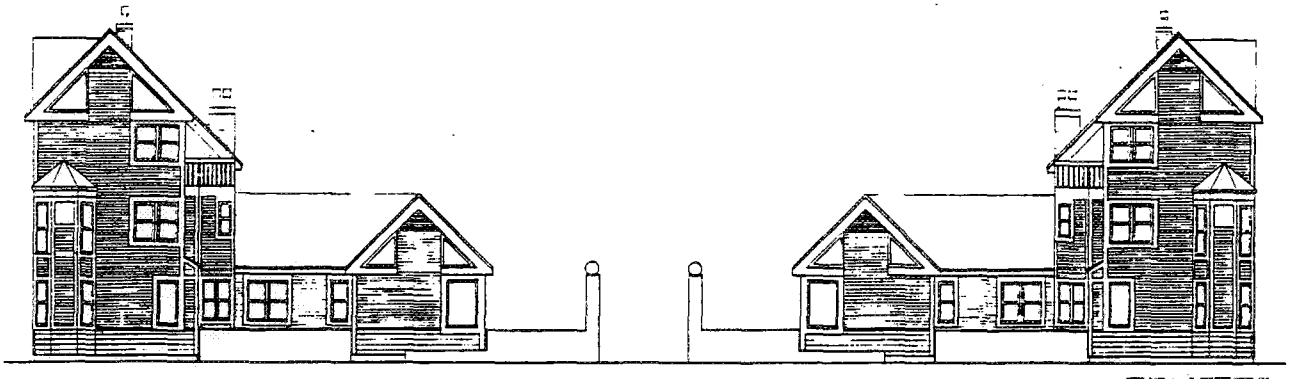
The development consists of four unit plan variations: one, two, three bedroom and duplex houses. Design allows for privacy separation between the two parts (residential versus commercial space) of the house and offers the possibility to have a home work space or separated bedrooms and shared (communal) kitchen, dining and living areas. Each unit provides a private small garden, where small children can play within the view of adults in the living room, the kitchen or workspace.

The units are 999 square feet in which the separate one story office structure is linked through a kitchen corridor. The floor plans can be adjusted so that work spaces can be joined to child-care spaces. It is also possible to join several of the row houses internally so that a group of single parents or widowed elderly people can pool resources, share a kitchen or work space together.

Project Title: **Contact:** **Address:**	**Dayton Court** **Harvey Sherman, Interior Designer** **89 North MacKubin Street, St. Pauls, Minneapolis**	
Building Type Townhouse Residential	**Location** Urban	**Stage of Completion/Vacancy Rate** A New American House Design Competition, 1984 Building, 1988
Building Description:	• Original design included a 14 unit complex with 4 styles of townhouses; actual development provided 4 townhouse styles • 1,000 square feet residential units • Suburban regeneration project located in residential area • Target: single parent family; professional; providing the home work option for lower income residents • Floor plans of 3 storey homes can be adjusted allowing work and daycare space	
Design, Zoning, Code Issues:	• Mixed use not included in existing by-laws • Community was divided on benefits of including home and work option. Approval required by: the neighborhood Summit-University Planning Council; St. Paul Historic Preservation Commission and the St. Paul Planning and Economic Development office	
	CASE: 7	

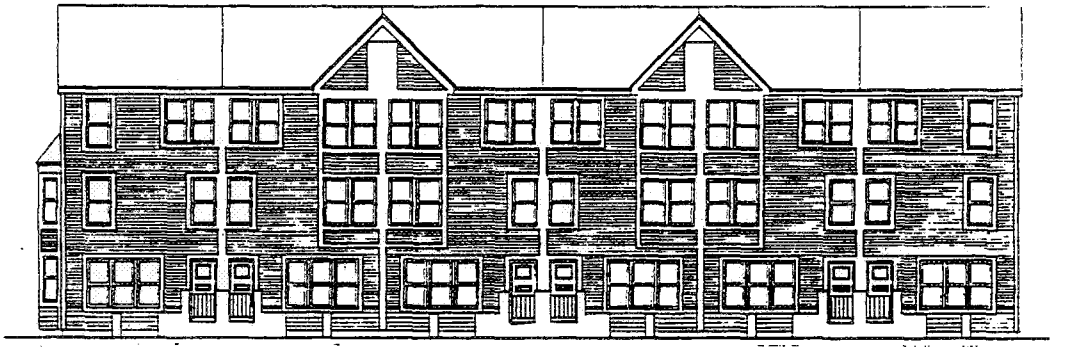
DAYTON COURT

In Summit-University

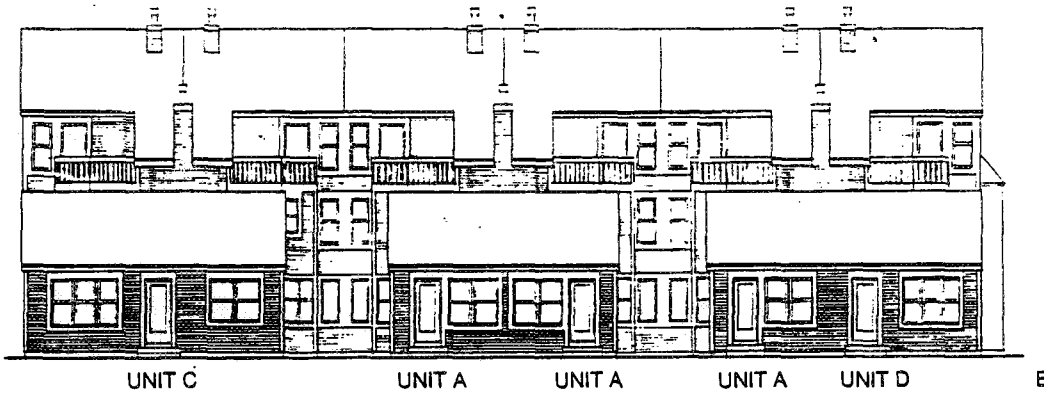


UNIT D

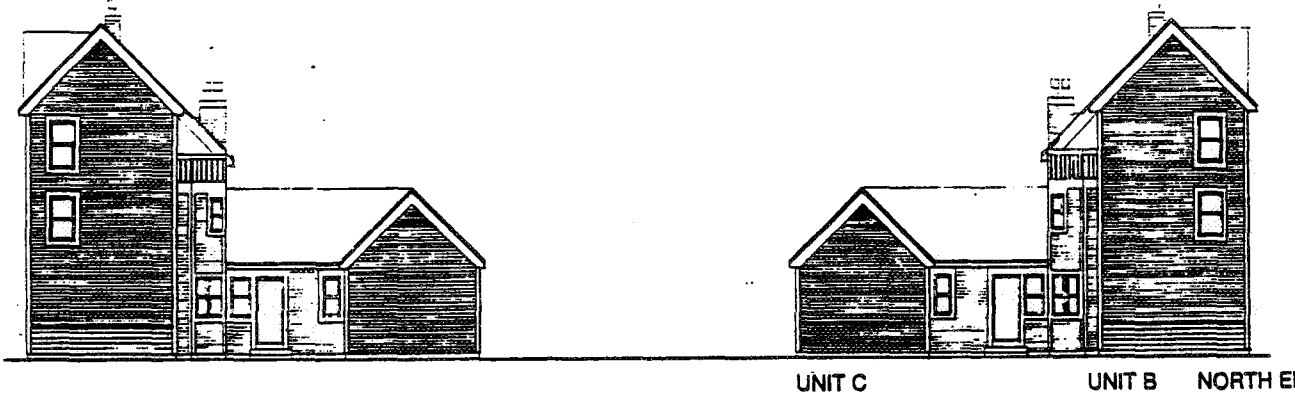
DAYTON AVENUE ELEVATION



UNIT D UNIT A UNIT A UNIT A UNIT B UNIT B DALE STREET ELEVATION



UNIT C UNIT A UNIT A UNIT A UNIT D EAST MEWS ELEVATION



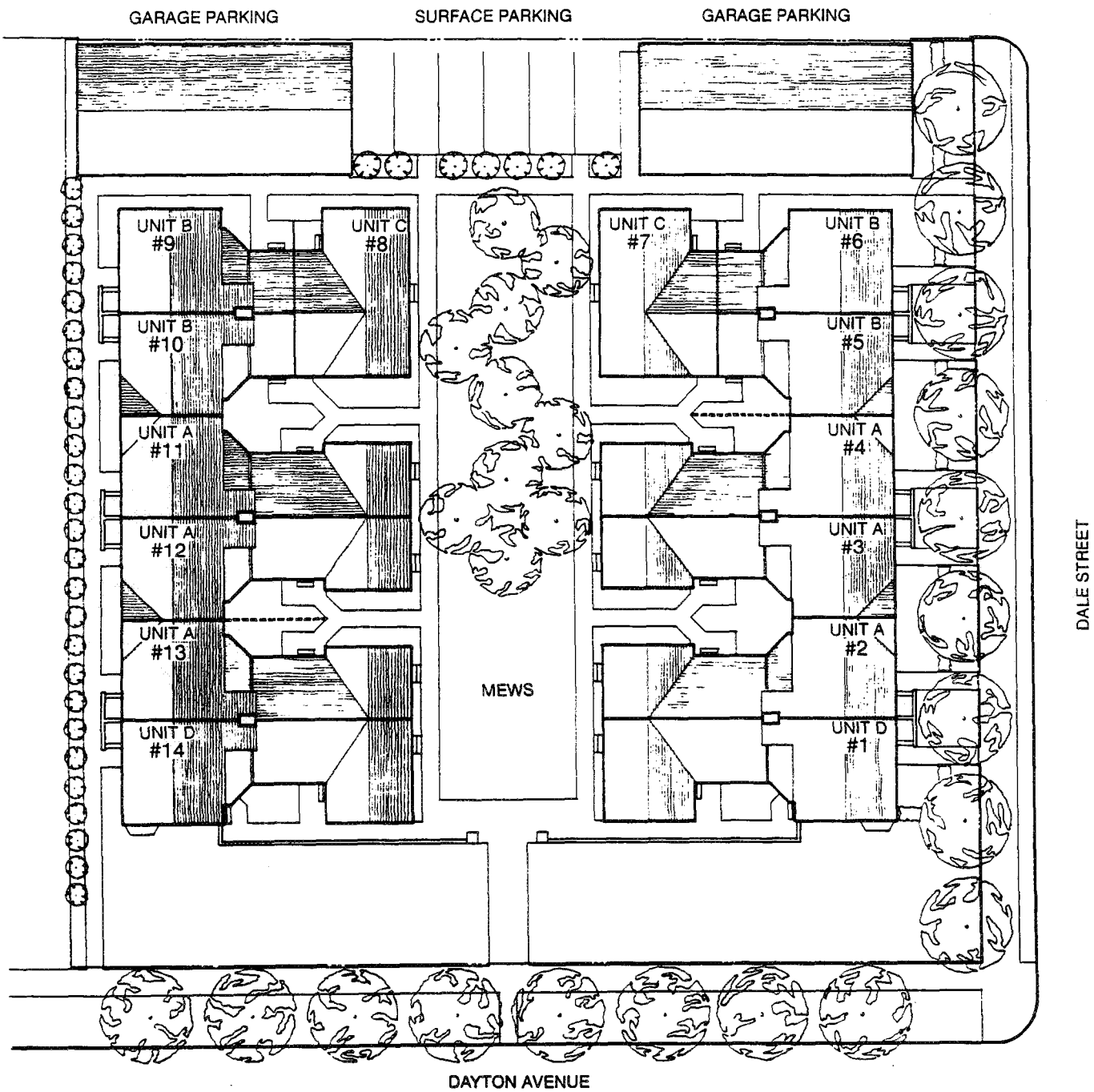
UNIT C UNIT B NORTH ELEVATION

DAYTON COURT

In Summit-University

North

SITE PLAN

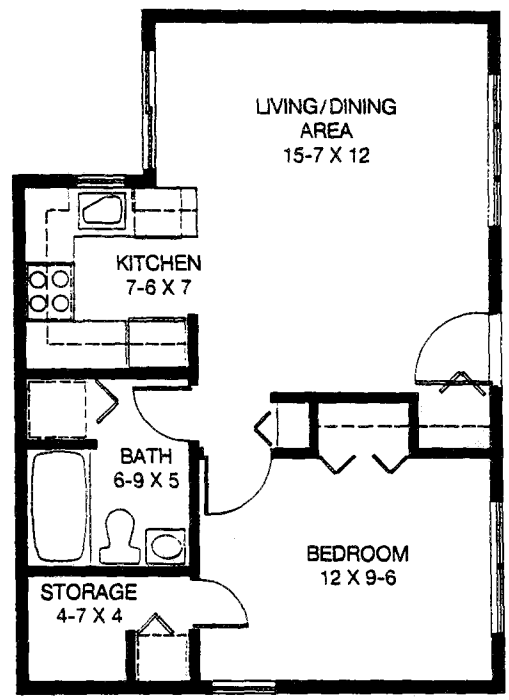


DAYTON COURT

In Summit-University

Unit C (One Bedroom)	Gross Area Sq. Ft.
Living Area	555
Garage Space	

Dimensions and square footage are approximate. Actual construction may vary.



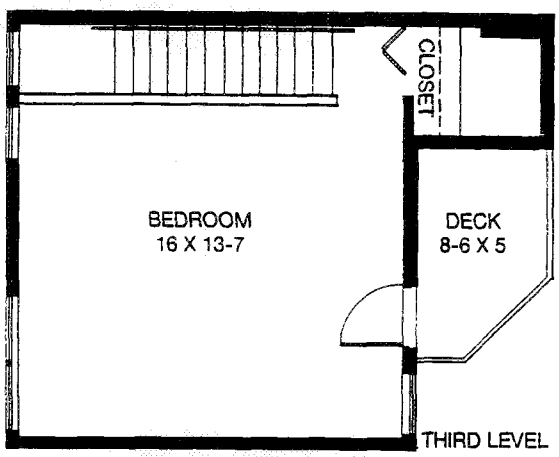
FLOOR PLAN

Developed By:
Dayton Court Associates
Phone: 332-5850

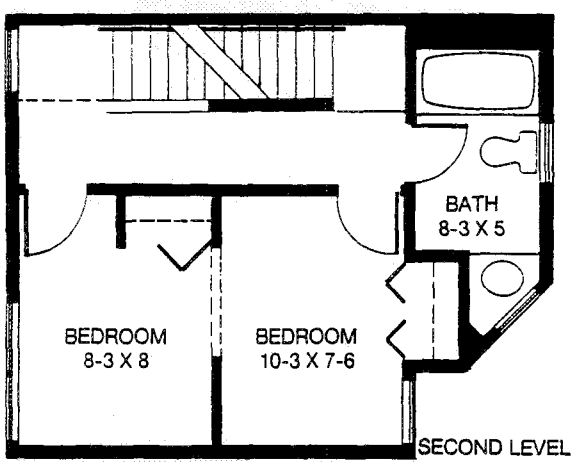
Equal Opportunity Housing

DAYTON COURT

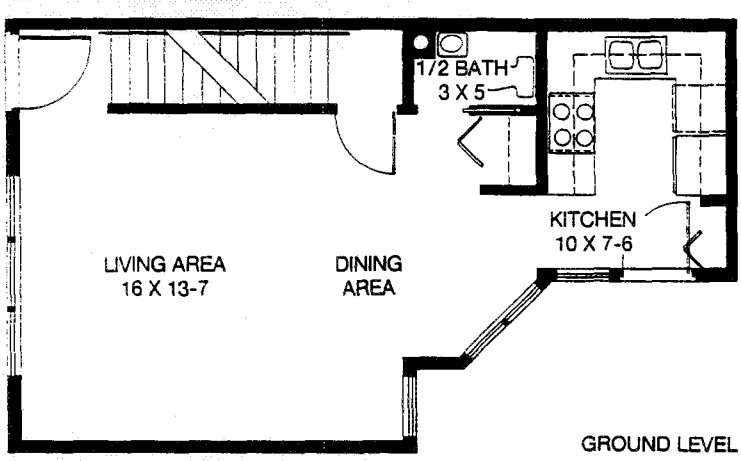
In Summit-University



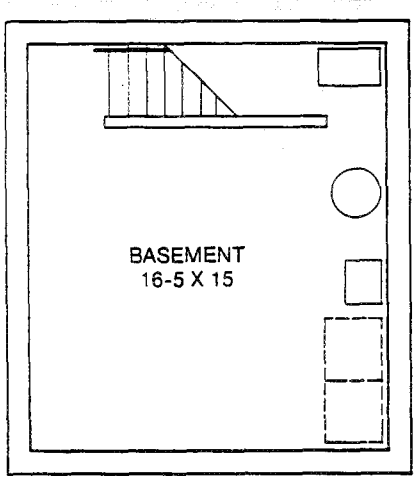
THIRD LEVEL



SECOND LEVEL



GROUND LEVEL



BASEMENT

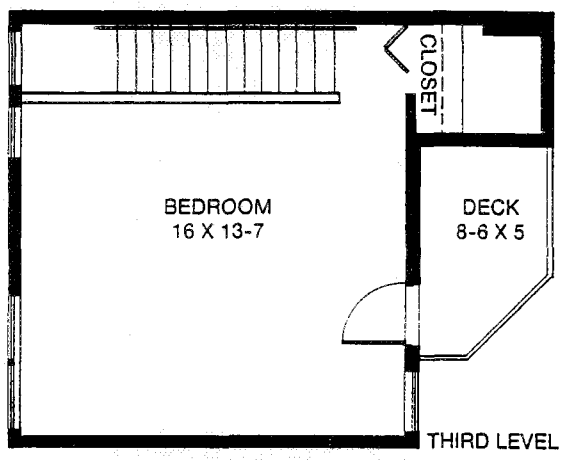
Unit B (2 Bedroom)	Gross Area Sq. Ft.
Living Area	1175
Basement	246
Garage Space	

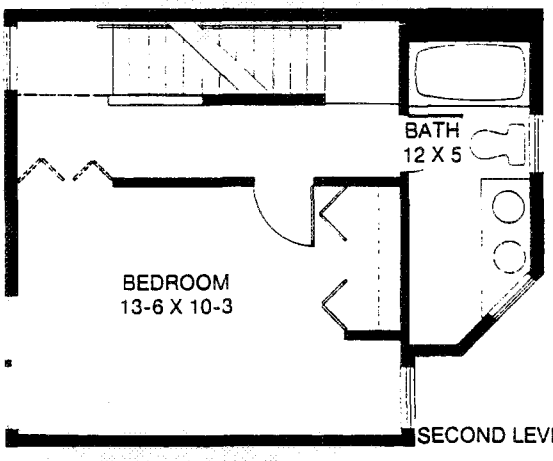
Dimensions and square footage are approximate. Actual construction may vary.

Developed By:
Dayton Court Associates
Phone: 332-5850

DAYTON COURT

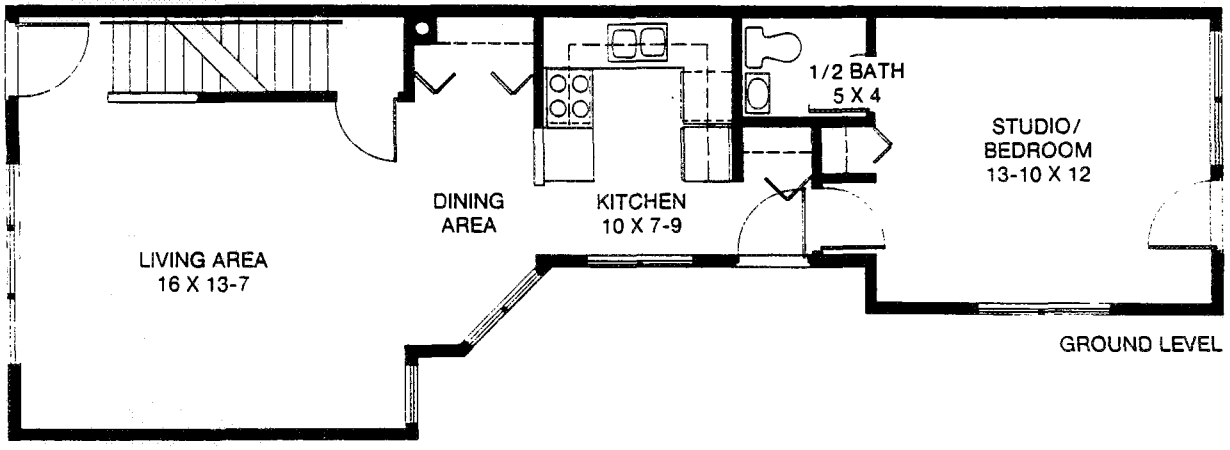
In Summit-University

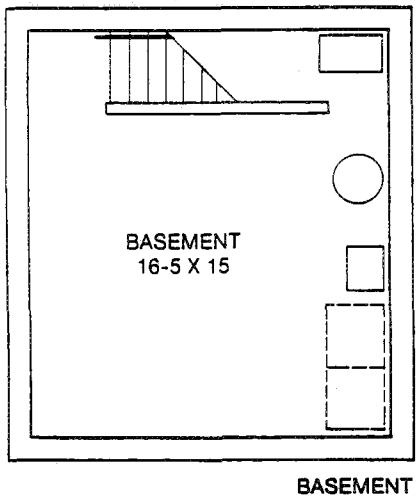




Unit A (3 Bedroom)	Gross Area Sq. Ft.
Living Area	1425
Basement	246
Garage Space	

Dimensions and square footage are approximate. Actual construction may vary.



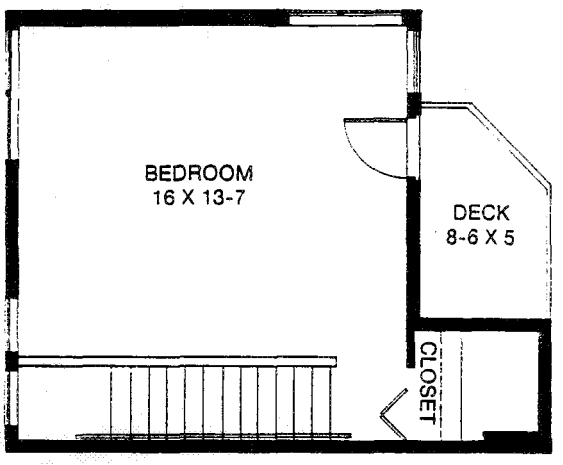


Developed By:
Dayton Court Associates
Phone: 332-5850

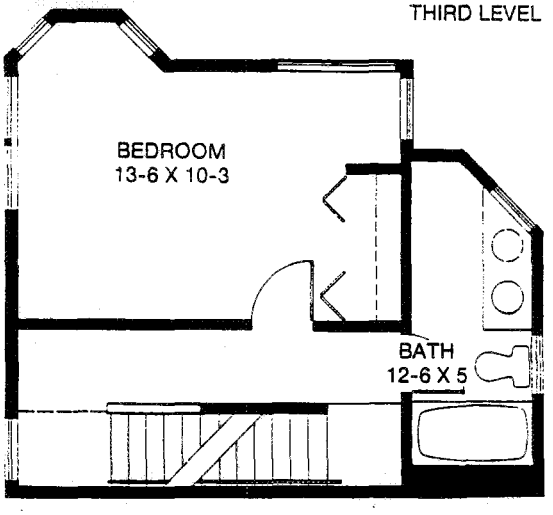
Equal Opportunity Housing

DAYTON COURT

In Summit-University



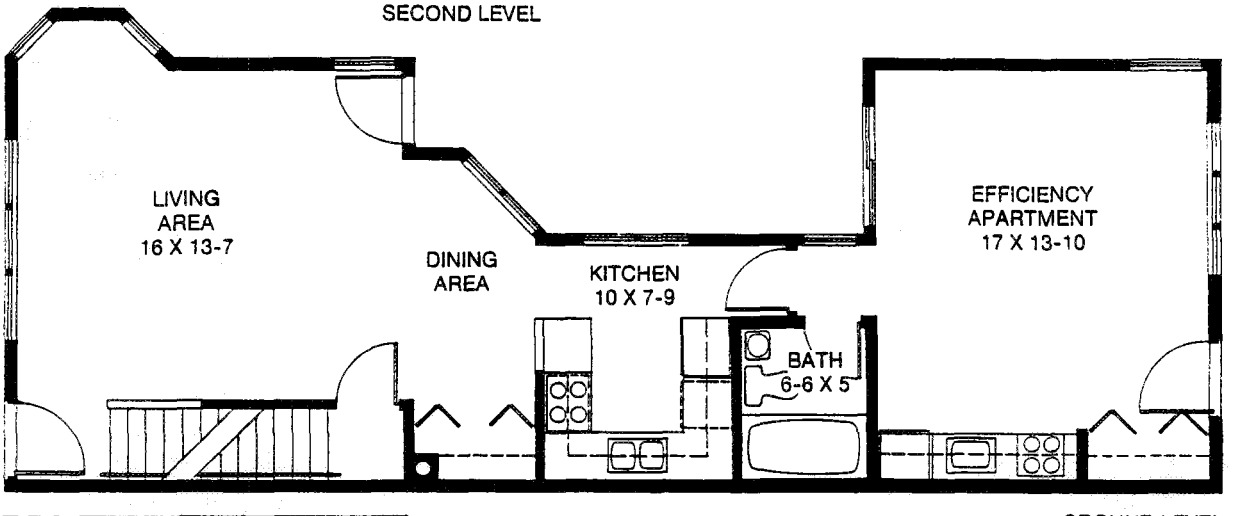
THIRD LEVEL



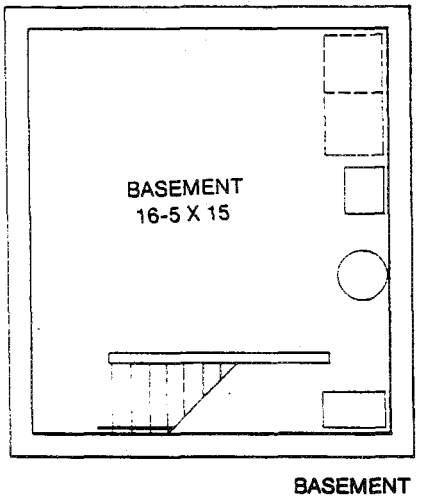
SECOND LEVEL

Unit D (Duplex)	Gross Area Sq. Ft.
Living Area	1485
Basement	246
Garage Space	

Dimensions and square footage are approximate. Actual construction may vary.



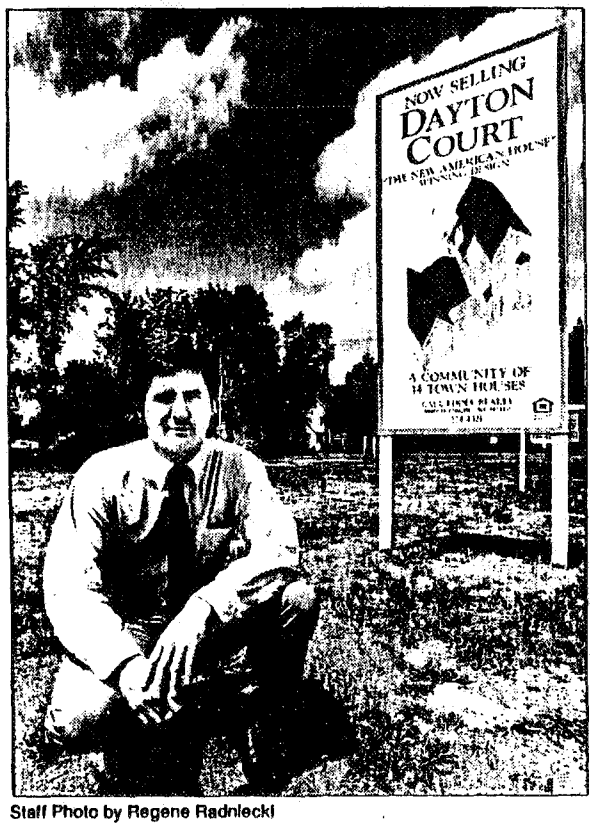
GROUND LEVEL



BASEMENT

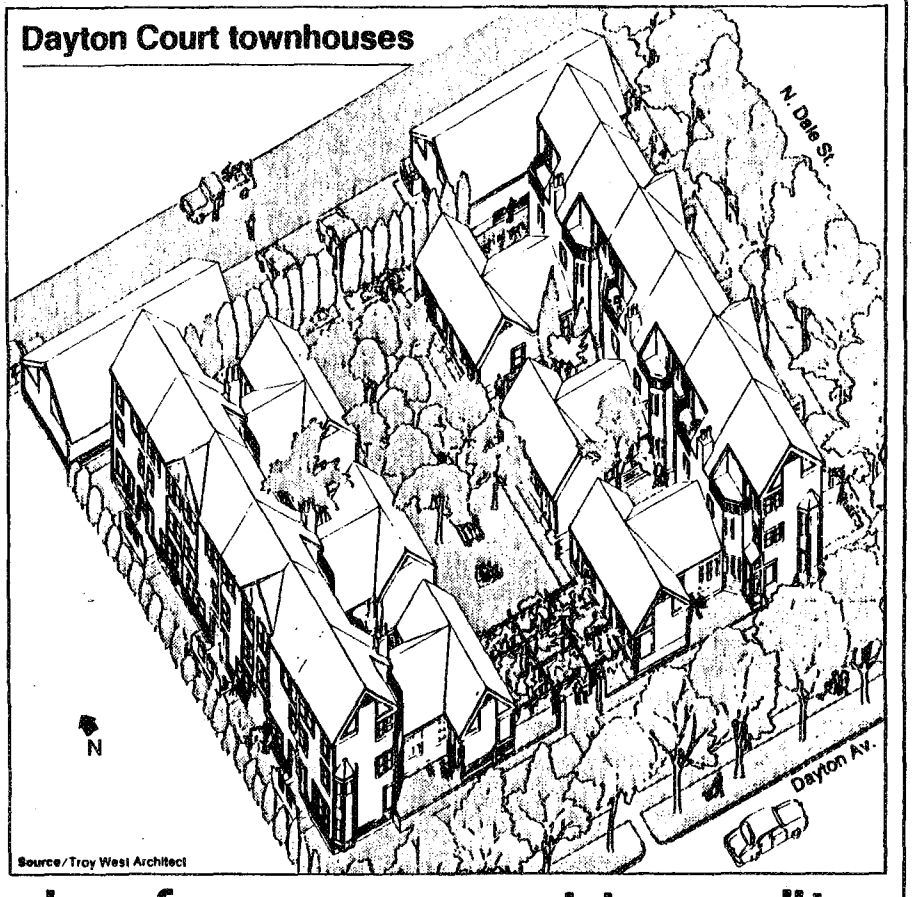
Developed By:
Dayton Court Associates
Phone: 332-5850

Equal Opportunity Housing



Staff Photo by Regene Radnlecki

Harvey Sherman, shown here on the site where Dayton Court is to be built, directed the design contest and is a partner in the development.



Source/Troy West Architect

Winning design moving from concept to reality

By Ingrid Sundstrom
Staff Writer

It's long been accepted that the traditional American family isn't just Mom, Dad and the kids anymore. Now, there are lots of family types, some with many adults, some with one parent, some with no kids. And now, lots of people work out of their homes.

But housing design hasn't kept up with changes that would meet the needs of these families, particularly those with low to moderate incomes.

Musing on those slightly shop-worn givens about five years ago, a couple of architects at the Minneapolis College of Art and Design (MCAD) wondered how they might foster such changes.

Thus was launched "A New American House," a major architectural competition sponsored in Minneapolis in 1984 by MCAD, the National Endowment for the Arts and Dayton's department stores. The competition drew 346 entries from 37 states and three foreign countries.

The unanimous vote of its judges went to a design by Rhode Island architect Troy West and California urban planner Jacqueline Leavitt. The winning design includes six 1,000-square-foot units, each with two distinctly separate parts — a three-story living space and a one-level at-home professional work space. The separate spaces are connected through a kitchen-dining area. The units also relate to each other with shared courtyards and gardens, which could become part of the overall living space in summer.

That design has captured much acclaim as it toured the country as part of "A New American House" exhibition.

But in the intervening three years, it had not captured the commitment of a builder who would give three dimensions to the touted design.

That is about to change.

After years of trying to find a developer who would build the project, MCAD assistant architecture professor Harvey Sherman, an instigator of the

Homes continued on page 24S

Landowner rights ruling sets stage for lawsuits

Many details left to subsequent cases

Associated Press

Washington, D.C.
An avalanche of new lawsuits is predicted by both those delighted and those disappointed by a Supreme Court ruling that government must pay property owners when it denies them full use of their land.

"Now, it's a lot of litigation," said Joyce Holmes Benjamin, a lawyer who represents the National League of Cities and the National Association of Counties. "We had hoped the court would reach a different conclusion but we'll know more about the decision's impact after we run a few more cases through."

Gus Bauman of the National Association of Home Builders agreed that the ruling enhancing property rights will have to be fleshed out by lower courts. But, he added, "For the average homeowners and lot owners, this decision means that the right they have to own and use their land has been strengthened enormously."

By a 6-3 vote, the high court said landowners must be compensated when government regulations bar them, even temporarily, from using their property.

The court said regulations such as zoning ordinances that impose new limits on an owner's use of land may amount to a "taking" for which the Constitution requires "just compensation." And the court said that compensation may be required even if the "taking" is not permanent.

The decision's full impact may not be evident for some years. It left numerous questions unanswered.

One key question remaining is

Ruling continued on page 26S

Case Study 8

Row House Development in a Urban Regeneration Area
Rivervalley Estates

Contact: George Frieser
Kardy Development Inc.
Edmonton, Alberta
T5K 0X4

Rivervalley Estates entails four rows of: 47 townhouse units and 10 office/condominium units within a 3 acre parcel of development in downtown Edmonton. The development is located near Jasper Ave. on property previously designated as park space by the municipality. Each unit allows for 1200 to 1500 square feet of residential usage with 55 percent cite coverage. The exterior design keeps with a red brick Victorian appearance with bay windows, mutton bars etc. Design features narrow streets and a variance to an 8 foot set back.

All hybrid units include computer alcoves, special office lighting, multiple phone lines etc. Commercial tenants are primarily professionals such as lawyers and accountants. Residential tenants include a significant number of early retirees, empty nesters and singles The majority of retirees are downsizing households and modifying lifestyle.

Rivervalley Estate is the provinces first mixed-use site according to the developer. A number of zoning changes were initiated with a review and approval process of 15 months over ten years of planning. Future development would emphasize price points, less brick, fewer residential amenities and less landscape.

Multiuse Residential Development

Project Title:	River Valley Estates	
Contact:	George Frieser	
Address:	Kardy Development, Edmonton, Alberta T5K 0X4	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Townhouse Development	Urban	Completed, 1990
Building Description:	• 47 townhouse units, 10 office units; 1,400 - 1,750 square feet • 4 rows; located close to downtown mainstreet area • Historical period design with mutton bars, brick, bay windows • Incorporating commercial office lease space • Target: professionals, empty nesters, singles, downsizing lifestyle • Units included full home work office features	
Design, Zoning, Code Issues:	• First multiuse approval in city with 55% cite coverage • Narrow streets for Victorian, Rosedale look; 8 foot set backs • Multiple variances required	
		CASE: 8

Case Study 9

The Gotkin House
Residential Renovation

Renovator: Jerry Gotkin
147 Kennard Avenue,
Downsview, Ontario
M3H 4M6

Located in Downsview, near Highway 401 and Allan Expressway, the Gotkin House provides customed designed home work space of the owner/renovator. This case provides a model of an upscale suburban enclosed office in an existing residential dwelling. The detached residential/work unit is located on a 52 x 110 sq. foot lot: 1400 square feet of main floor, 1400 of second floor and 1400 square feet of basement area with an attached 700 square foot deck. The three bedroom suburban dwelling, houses the business operations of the developer who employs three family members.

The interior work space incorporates a computer area for laser printer, fax, copier, special office lighting - pots and fitted lights for desk tops, security system, multiple phone lines, shelving directly accessible to the work area. Working with an interior designer, work was undertaken to enhance the illusion of space since ceiling levels are limited to the existing height.

The house is located on a ravine with the lower level office built within a 1,600 square foot addition running across the back of the existing structure. A large bay window and a glass French door to the stairwell topped with hallway skylights provide natural and artificial lighting.

The developer noted no municipal zoning or building code problems prior to construction.

A side entrance was built to accommodate clients and avoid traffic in the family's living quarters.

Multiuse Residential Development

Project Title:	Gotkin House, Professional Renovator	
Contact:	Jerry Gotkin	
Address:	147 Kennard Avenue, Downsview, ON M3H 4M6	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Detached, Single Home	Urban	Completed
Building Description:	• 1400 main, second and basement (each) • 12 x 12 square feet of home work space in each of 2 offices • Located close to renovator's market area, major highway (401) • Offices features include: special lighting, mirrors for space impact, 3 phone lines, fully equipped work stations including copier, laser printer etc.	
Design, Zoning, Code Issues:	• No zoning or municipal building code issues noted • Low profile clientele, usually not required to use office for client meetings	

CASE: 9

Case Study 10

Modernist Studio Prototype
Beaches Area, Toronto

Contact: Steven Fong,
Steven Fong Architect,
32 Gibson Avenue
Toronto, Ontario
M5R 1T5

The modernistic single detached hybrid unit was originally designed as an investment property in Toronto's beach front community. Drawing from a number of Modernist sources, the house is a staggered, double story with near blank side walls, side entrance, double-story front room, cascading stairs and rooftop terrace "reminiscent of Corb's low cost Citrohan House of 1922 and Le Corbusier Carthage 1928 project (Fisher, 1991).

According to the architect "the dwelling reclaims poetry as its basis to combat the increasing alienation of urban inhabitants from the natural world. Architecture must return to pre-functional, pre-ideological space whose essence reveals the infinite and eternal dimensions of human existence" (The House as Social Critique, 1991).

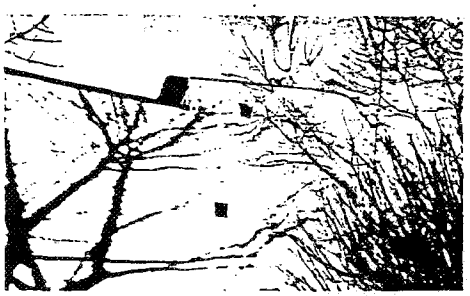
The mid-block Toronto lot has an 18 foot frontage and 100 foot depth in an older residential area. Total 1526 square footage provides space for working, living, eating, sleeping and study, plus a kitchen, bathroom and roof deck.

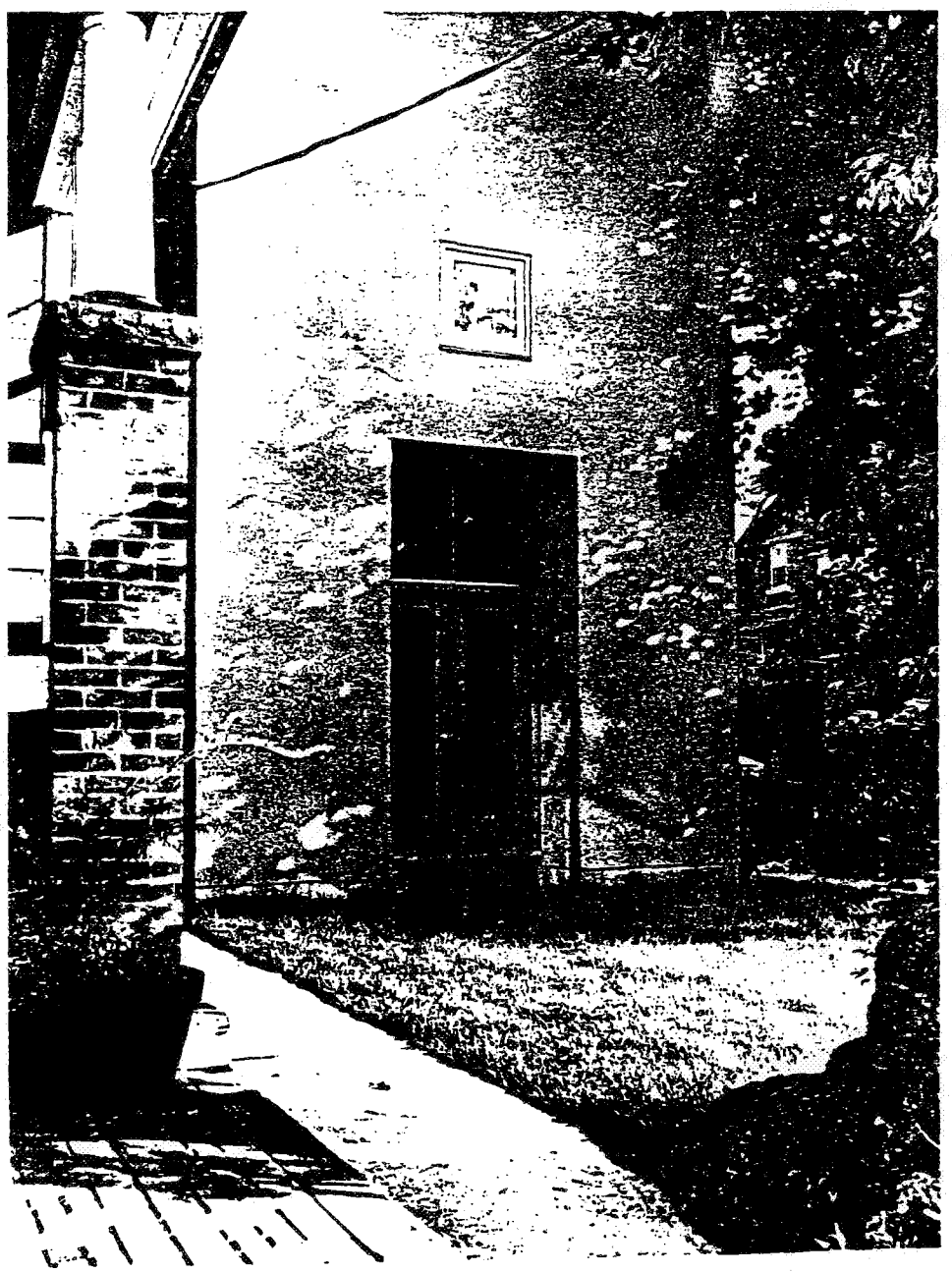
The builder noted that the majority of costs associated with the project was attributable to land and financing. Building code variance was required on set back and stair width. Target market for the prototype is single and two person families.

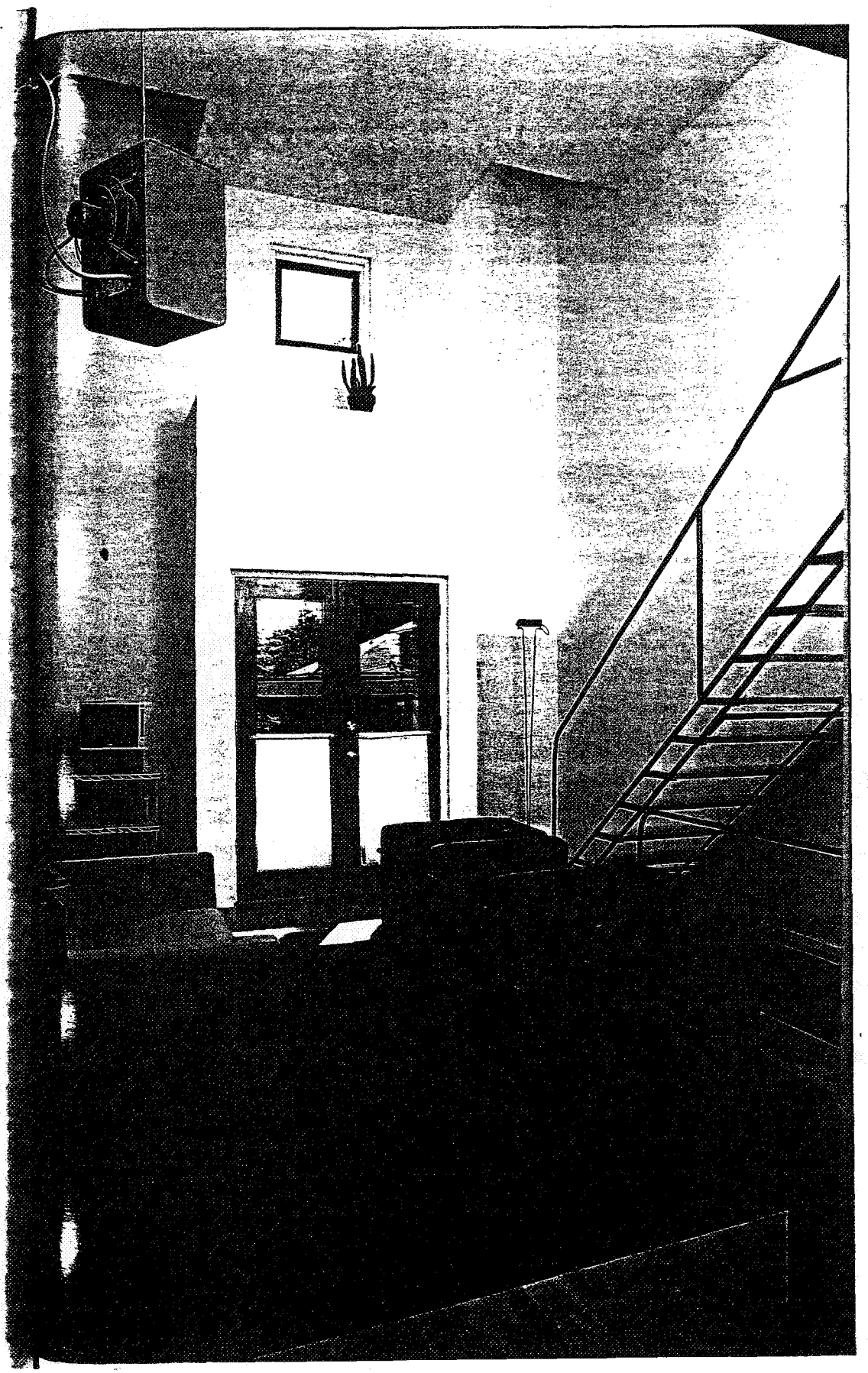
The architect noted that the current building code limited his design for a more "efficient stairway for minor flights (from second to third floor) as spiral stairs were preferable allowing more flexibility for the small lot size. These stairs are permissible in certain American states. In addition, the initial objective of the design was to create lower cost housing, however, the high cost of land in the beaches area makes this design less attractive to the beach area..

Project Title:		
Contact:	Steven Fong, Architect	
Address:	32 Gibson Avenue, Toronto, Ontario	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Detached Residential Freehold	Inner City	Completed
Building Description:	• 1,500 square feet, including 3rd floor "New York style loft" • Award winning, innovative design of small, detached residential unit • Target: young, childless couples or single person • Client initiated	
Design, Zoning, Code Issues:	• Municipal set back variance required on 18 foot wide lot • Minimum width of stairs for minor flights of stairs	

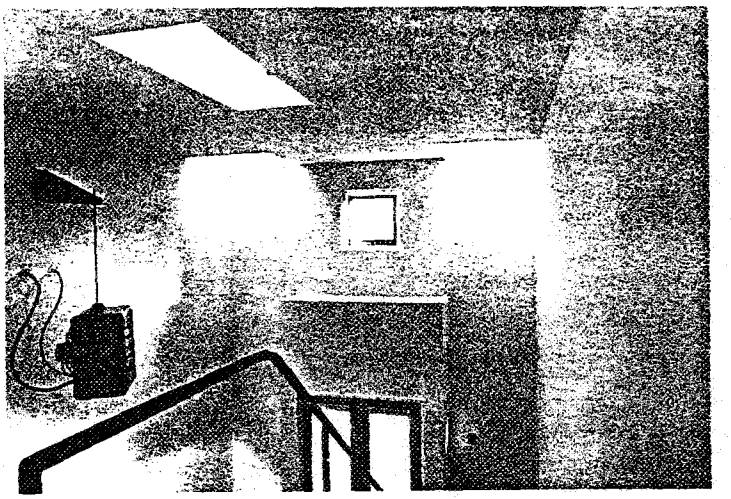
CASE: 10

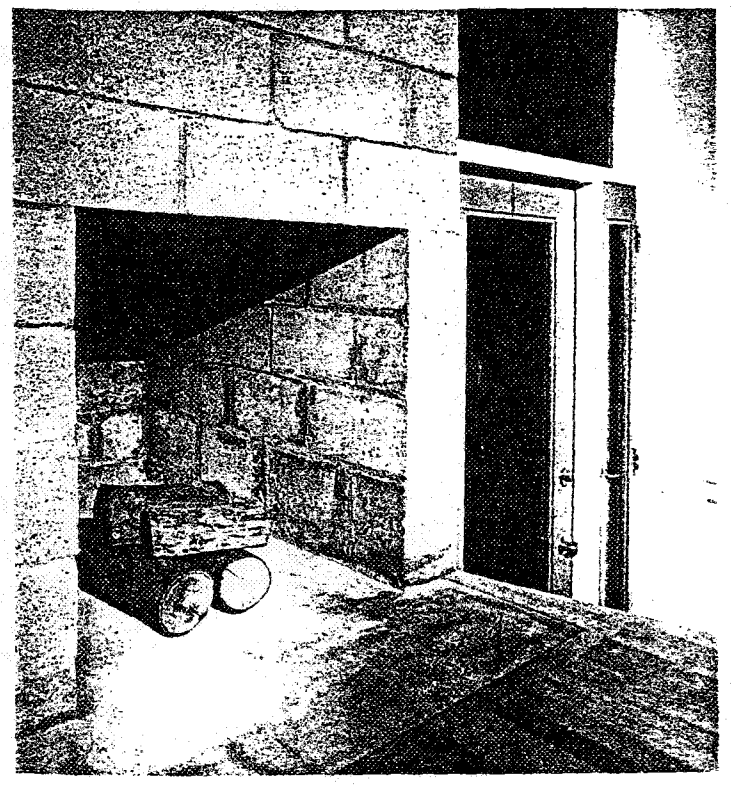


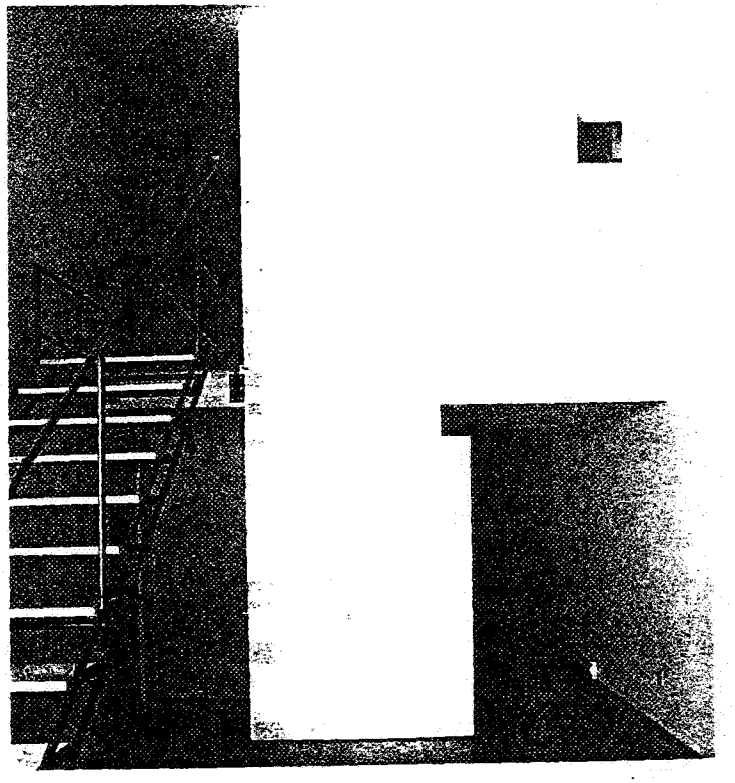


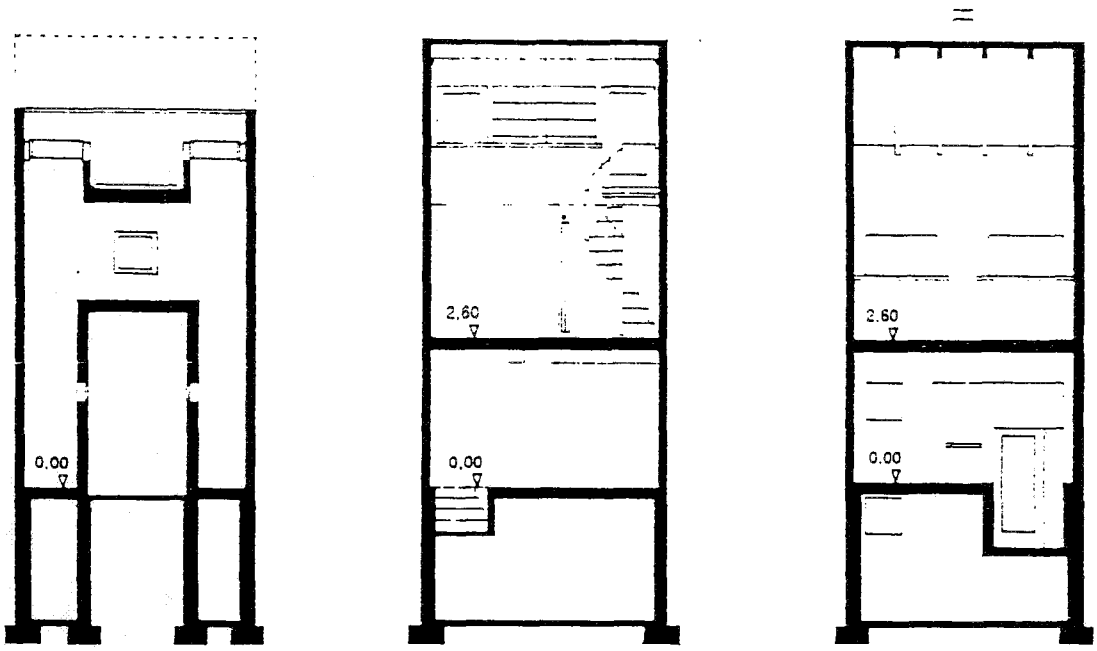


Photos: *Robert Burley/Design Archive.*





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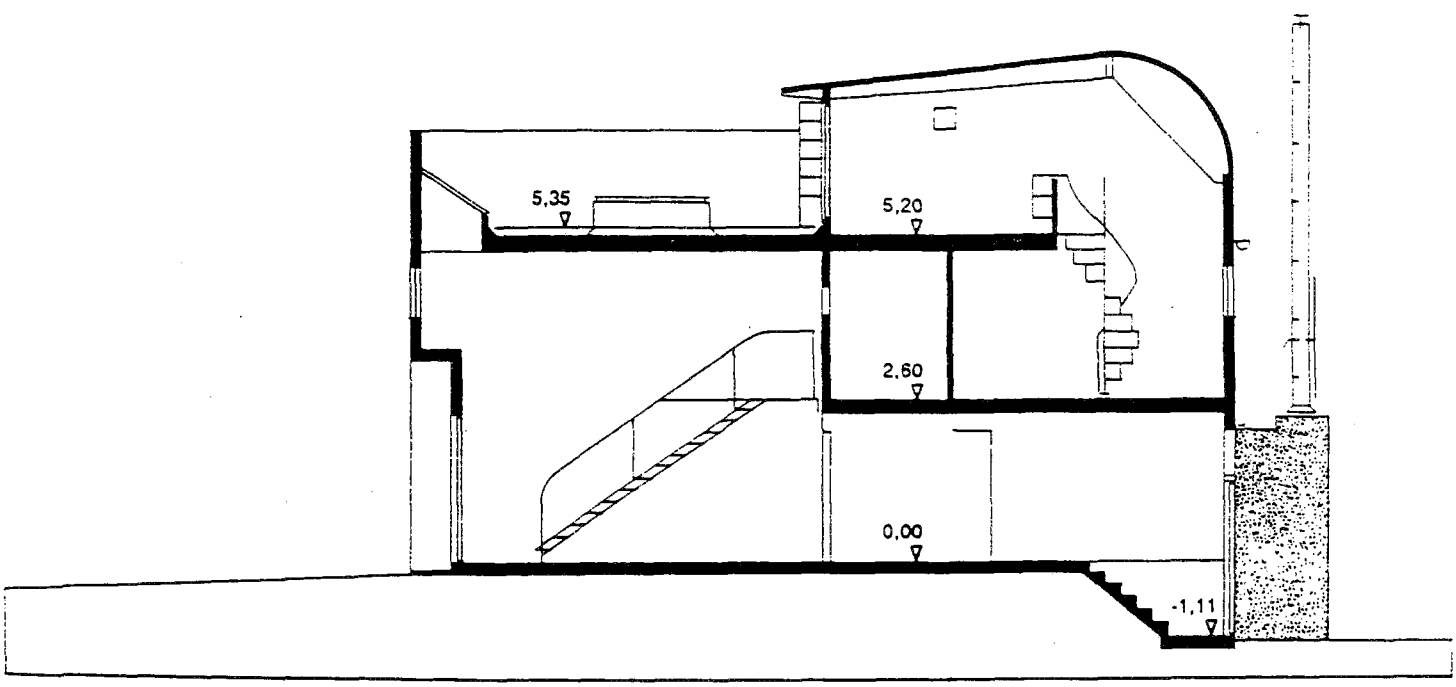
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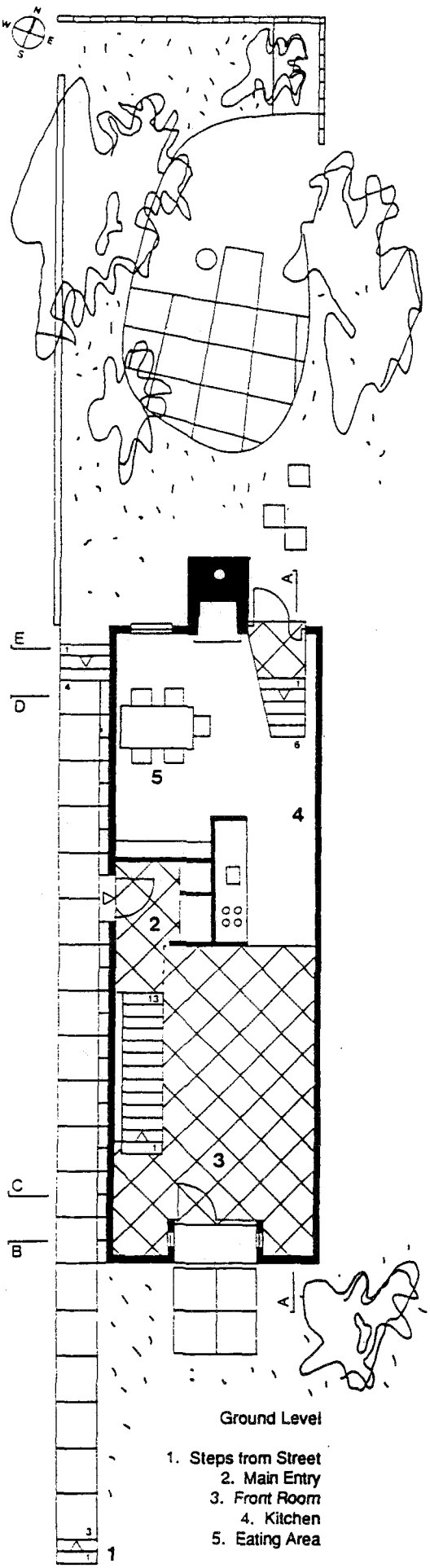
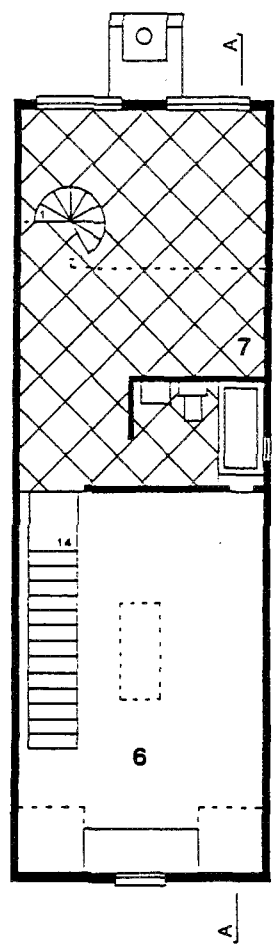


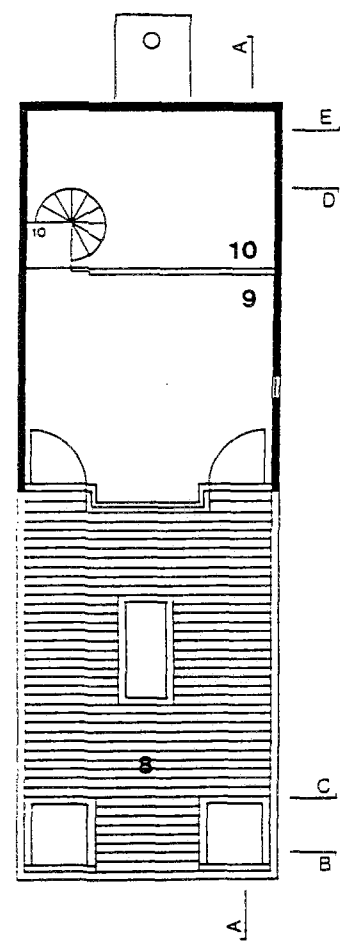
Ground Level

1. Steps from Street
2. Main Entry
3. Front Room
4. Kitchen
5. Eating Area



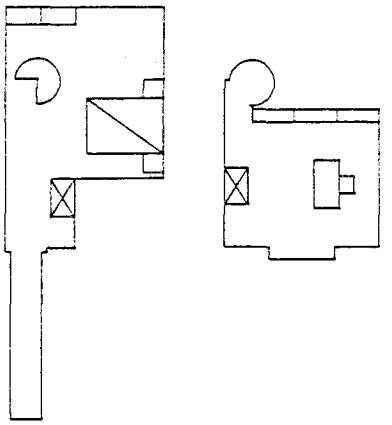
Second Level

6. Open to Below
7. Sleeping Area

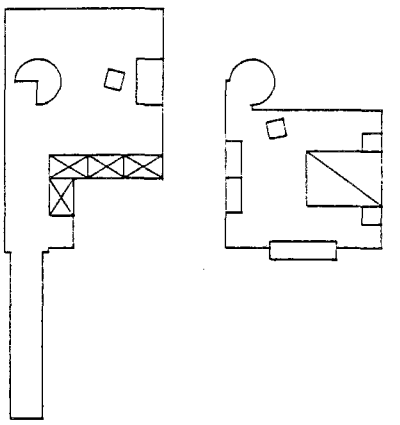


Third Level

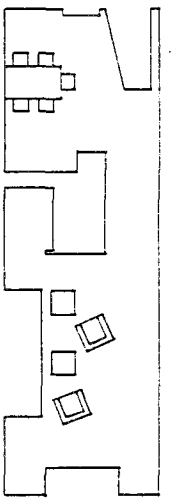
8. Roof-deck
9. Study
10. Open to Below



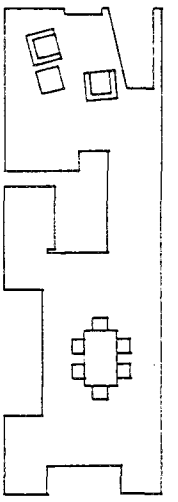
Second/Third Levels
Alternative #1



Second/Third Levels
Alternative #2



Ground Level
Alternative #1



Ground Level
Alternative #2

Alternative Functional Arrangements

Case Study 11

Modular/Mobile Home Office Units
Vancouver, B.C.

Contact: Richard Vallee
Home Office Cabinets
1094 Sitka Square
Vancouver, B.C.

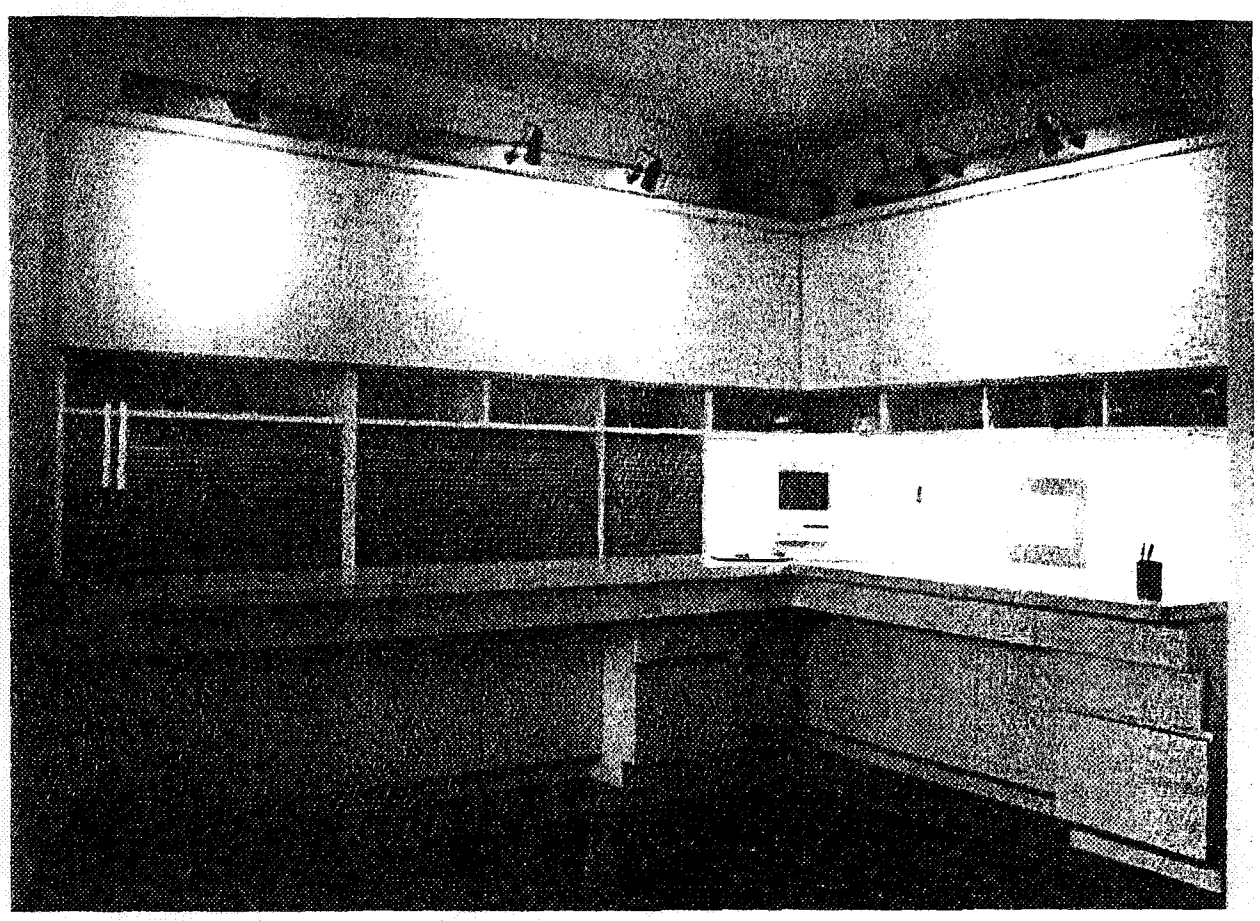
This case has been included as it provides example of innovative modular product designed for the home office market. The L shaped furniture units are designed as "modular and mobile" for homeowners who anticipate a future need to enlarge or to move office facilities. Design accommodates most standard office needs i.e. computer alcoves, special lighting, filing systems, roll top cabinetry, mountable drafting table and pull out extension, provision for electrical wires and mountable modules that can be easily altered.

The designer suggests a target market of the self-employed. Market interest in the product is defined as "high" by the designer/owner who is active in the Vancouver area in researching and promoting flexibility for alternative work options i.e. The Provincial Commission for Housing Options.

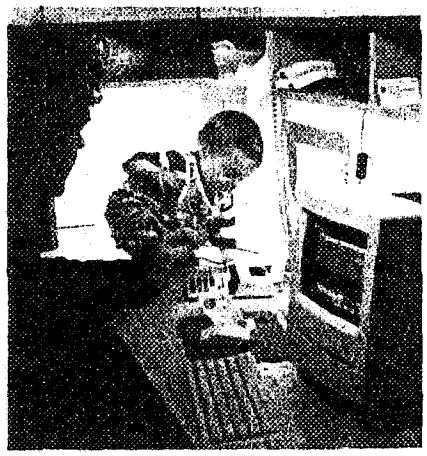
Project Title:	**Modular Home Office Units**	
Contact:	**Richard Vallee, Builder**	
Address:	1094 Sitka Square, Vancouver, BC V6H 3P7	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Cabinary	Not applicable	Not applicable
Building Description:	• L-shaped, interior wall units taylored to home offices • 850 square foot+ offices • Allows for mobile modular design including roll top cabinet, shelvings, telephone and computer, special lighting	
Design, Zoning, Code Issues:	• Perceived as "technically a grey area" • Nonspecific to modular home office designs	
		CASE: 11

Home Office Cabinets
1094 Sitka Square, Vancouver

As patterns of living and working change people are finding themselves performing paid work in the home. Most modern apartments and houses do not lend themselves to a home office. Therefore the office must be introduced into a room planned for another purpose. This home office design seeks to solve conflicting spatial and functional needs, as well as aesthetic ones.



The Home Office forms part of the living room. It supports all normal office functions as well as some additional ones. Features include:



- Roll tops to cover clutter
- Two file drawers
- Built in halogen lights
- Demountable drafting table
- Pull out table extension
- Full extension drawers
- Provision for electrical wires
- Demountable modules that can be moved and set up in different arrangements

Designer: **Richard K Vallee** MAIBC
Cabinet Maker: Helmut Rilka, Custom Woodworking
Year Completed 1991

Case Study 12

Remote Telework Community
Bamberton, Vancouver,
B.C.

Contact: Al Waisman
Waisman Dewar Grout & Carter Inc.
1505 West 2nd Street
Vancouver, B.C.
V6H 3Y4

The proposed Bamberton development will transform over the next twenty-years, 1560 acres of a currently abandoned cement works site (located 32 kilometers north of Victoria, B.C.) into a planned commuity housing 12,000 people. Promotion literature suggests that the cite will be "North America's most liveable and ecologically responsible new town" ..." planned with the extensive participation of surrounding residents and environmental groups which embody the many traditional values associated with small town life, ecological sustainability and a positive vision of the future".

The design team uses the term "podinizations' or groups of homes to describe the tradition coastal village to town look of the development. Residential units include living space of 2000 to 3000 square feet. The development will initially be targeted to artists and home workers.

The proposal is being developed by the South Island Development Corporation which is owned by four B.C. pension funds: IWAM the Carpentry Workers, the Telecommunications Workers and the Food and Commercial Workers Union. The concept behind the project is to return and reinvest in to the B.C. community, local pension investment with innovative and ecologically sensitive community and residential design.

Bamberton is a unique concept and the only case study noted where a home work perspective moves beyond a single development and is extended into full town or community form.

Multiuse Residential Development

Project Title:	Bamberton Development	
Contact:	Al Waisman, Architect and Urban Planner	
Address:	Waisman Dewar Grout & Carter Inc., 1505 West 2nd St., Vancouver, BC V6H 3V4	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Residential Community Planned Development	Bamberton Vancouver Island, BC	1992 Planning 1993 Proposed Building

Building Description:

- Up to 250 homes
- Walking distance to all community facilities and retail areas; limited car access
- Target market - artistic community, telecommuters
- All single family units to be equipped with fiber optic technology
- Former cement factory land site to be regenerated into ecologically sensitive community
- Proposed 70-acre Environmental Technology Park ie. firms involved in solar technologies, energy efficient products, energy efficient products

Design, Zoning, Code Issues:

- Project funding secured by the BC I.W.A., Food and Commercial Workers and Carpentry Workers Pension Fund

CASE: 12

The Bamberton Code

In order to guide the creation of the Town of Bamberton, a set of Design Principles was written and a "Bamberton Code" drawn up. It is the belief of South Island, based on their track record as Vancouver Island's largest developer, that the route to long lasting success is to build developments that are a positive contribution to the community. Therefore:

WE, THE BUILDERS AND RESIDENTS OF THE TOWN OF BAMBERTON, STAND BY THE FOLLOWING INTENTIONS:

1. That Bamberton represents a way of living which seeks to serve the needs of our own generation and generations to come.

2. That Bamberton represents a new possibility for the way people co-exist with nature, upholding the ideal of responsible stewardship, and seeking to be ecologically sustainable in the use of natural resources such as water, soil, habitat, energy and raw materials.

3. That Bamberton represents a rediscovery of the traditional virtues of community, being conducive to social interaction, care and mutual support, encouraging of responsibility in the pursuit of shared goals, and supportive of cultural and artistic richness.

4. That Bamberton represents a new possibility for the building of a self-reliant, local community economy, emphasizing enterprise and initiative; the contribution of labour; mutual economic support; innovation, research and development; personal, social and global responsibility; and long-term ecological sustainability.

5. That Bamberton represents a positive opportunity for all who call Bamberton home, being encouraging of creativity, learning and growth, and nurturing of a deep appreciation of the gift of life.

The Code and the Design Principles will be used to guide future development and to keep future partners, builders and residents mindful of the intentions and commitments underlying the project.

Once built, a town may exist for thousands of years. Perhaps more than anyone else, the builders and designers of a new town are accountable to future generations, and their unspoken needs. In honour of this trust, they must endeavour to reflect the needs of the future in the designs of the present.

Looking After Mother Nature

Bamberton's proposed Ecological Protection Policies

South Island has made commitments to the following policies in order to protect the local Bamberton ecosystem and establish a harmonious partnership between humanity and nature.

A. Protecting the site as a whole

- 50% of the site will be left as green space for parks, nature sanctuaries, open spaces and privately held protected areas for native plant species.
- Predominance will be given to native plant species throughout all public spaces, to protect and encourage local biodiversity.
- 25% of each private lot will be retained under native species, and the area of each lot that can be covered with buildings, decks, and paving will be limited.
- Only organic methods of horticulture and biological methods of pest management will be allowed, to preserve the health and biodiversity of the ecosystem as a whole.
- There will be an organic nursery centre as a focus of education and advice.
- There will be a 'no-burning' rule for cut trees - chipping & mulching instead, with the possible storage of large limbs.
- The narrower-than-usual roads will occupy a smaller percentage of the site, and cause less disturbance to ecological habitats and green space.
- There will be no hunting, trapping or killing of wildlife.
- There will be a policy to protect the watercourses, mandating a minimum ten metre no-build strip from any lake, pond, swamp or creek.
- No treated lumber or other toxic material will be allowed to be stored within 40 metres of any watercourse.
- The whole shoreline, up to three metres above the tideline, will be retained in public ownership, to allow for future walkway construction when and where appropriate.
- The sewage treatment plant will recycle organic matter into compost and return it back to the soil.

B. Protecting each neighbourhood

- As each neighbourhood is being planned, a survey of local birdlife (in the nesting season), mammals and amphibians will be carried out with an analysis of their habitat requirements.
- There will be a similar survey of native plants and trees which will enable any pockets of undisturbed old growth forest to be located and preserved.
- This information will form part of an overall ecological site analysis and permit habitat protection policies to be built into the neighbourhood plans.

C. Protecting the individual home-sites

- An ecological site inventory will be completed before purchase to address site-specific protection issues.
- All trees over 20 cm in diameter will be protected, and a special permit will be required for cutting.
- A Building Site Code will be written to ensure the protection of the homesite during construction.
- All topsoil will be protected for re-use after development.
- A voluntary plant inventory process will be developed for individual purchasers, along with a rare plant protection/ transplanting program.
- There will be a voluntary 'standing snag' protection policy, to preserve habitat for birds, bugs and beetles.

D. Protecting the Public Lands

- The proposed golf course, if developed, will be sited with ecological care and organically managed.
- A Public Landscape Code will lay down tight standards for the protection and maintenance of public areas and the retention of native vegetation.
- Various habitat enhancement projects will be explored; research will be done to ascertain whether water storage ponds will be needed to support fish enhancement projects in John's Creek.

E. Protecting Water Quality

- The storm drainage system will use natural ecological purification systems.
- The all-organic policy will eliminate the risk of pesticide or nutrient run-off into the Saanich Inlet.
- Soil and habitat conservation measures will prevent soil erosion into the Inlet.
- By-laws will protect both the soil and the sewage system from contamination by oil, paints and other toxic liquids. Depending on cost, toxic contaminant detectors may be installed inside the sewage pipes.
- A 'Green Business Code' will help ensure that local businesses dispose of all their liquid wastes correctly.
- As the town develops, water and air quality monitoring systems will be established to help us achieve the goal of ecological sustainability.
- The waters of the Saanich Inlet are not within local municipal jurisdiction; a voluntary Saanich Inlet Protection Code will nevertheless be established.

F. Protecting the Air Quality

- Only high quality wood and gasburning stoves will be allowed to eliminate smoke and particulate emissions.
- There will be no outdoor burning - chipping and composting will be used instead.
- The organic policy will eliminate problems of pesticide drift.
- Guidelines and standards are being written to govern building materials to minimize indoor air pollution.
- A 'Fuel Smart' program will be established to encourage high vehicle maintenance standards and reduce vehicle emissions.
- Carbon dioxide emissions from fossil fuels, which are responsible for 50% of global warming, will be reduced by the pedestrian-oriented lay-out, the existence of the local economy, the commitment to energy efficiency, sustainable transportation measures and the avoidance of tropical hardwoods.
- Noise control regulations will stipulate acceptable decibel levels at lot-perimeter, and specify certain 'quiet times'.

G. Long-term protection

- A Bamberton Biodiversity Advisory Team will be formed to assist and coordinate the above.
- As the residents arrive, a Bamberton Nature Preservation Trust will be formed to assume responsibility for the protection of the environment as a whole.

We invite your thoughts and ideas. Please write to Guy Dauncey, environmental adviser, Bamberton, South Island, 550-2950 Douglas St, Victoria, B.C. V8T 4N4.

TWELVE DIMENSIONS OF ECOLOGICAL SUSTAINABILITY AT BAMBERTON

1. Bamberton will restore an ecologically scarred and damaged site, bring life back to the ruins, and establish a process of permanent stewardship to safeguard the land from future ecological harm.

2. Bamberton will seek to encourage the values needed for sustainability by inviting everyone, whether resident, builder or banker, to sign the Bamberton Code. (See Bamberton News No. 1)

3. Bamberton is being consciously designed to preserve green space, farmland and forests, and to protect the region from urban sprawl and uncontrolled development pressures by accommodating a significant percentage of the population growth forecast for the southern Cowichan Valley area. (See Bamberton News No. 2)

4. Bamberton will encourage the development of a friendly, supportive community - giving special encouragement to the arts, and to affordable housing, in order to nurture a healthy, balanced community of all ages, where people will be able to live a whole and balanced life.

5. Bamberton's site lay-out is being designed to encourage a strong sense of community, with narrower, pedestrian priority streets, and neighbourhoods where people can go about their lives without having to depend on an automobile.

6. Bamberton will go out of its way to protect the soil, air, water, native species and biodiversity by numerous controls and initiatives and by the highest available quality sewage treatment, involving recycling and composting. (See Bamberton News No. 3)

7. Bamberton's economy will enable people to work locally, minimizing commuting outside the area, and enabling the community to develop control over its own economic destiny. Bamberton's businesses will be encouraged to achieve ecological sustainability through education, encouragement, and the development of an environmental business code. (See Bamberton News No. 2, and forthcoming issues).

8. Bamberton will encourage a high level of research, innovation and development and the provision of sophisticated telecommunications facilities (such as fibre-optics) in order to assist the shift from a resource-based economy to an ecologically sound intelligence-based economy.

9. Bamberton will aim to achieve a very high level of domestic, commercial and construction waste reduction and recycling through education, legislation, community recycling, and a materials recovery plant.

10. Bamberton will encourage the reduction of carbon dioxide emissions, air-pollution, and a lessening of our habitual dependency on the car by the design of its streets and neighbourhoods, by the existence of the local Bamberton economy (reducing the need for commuting), and by the availability of pleasant, friendly, public transit.

11. Bamberton is investigating the establishment of a Bamberton Institute, which would work to ensure the practical application of sustainable community ideals, both at Bamberton and around the world. Associated with the Institute, it is hoped to establish a Ecological Interpretation Centre, a demonstration garden, a sustainability indicators project and many other projects and initiatives.

12. Bamberton will share its experiences and resources and work with others to achieve ecological sustainability for the Cowichan region area, for Vancouver Island, and for the Earth as a whole.

Case Study 13

Rural Home Office Renovation
Marsh Hill Farm

Contact: Elizabeth White
Marsh Hill Farm
R.R. #2
Sterling, Ontario

This detached 4,000 square foot home includes an office situated outside the bedroom, and additional office with 5 work stations and walk out deck. The choice of the rural location requires significant travel distance to all transportation and community facilities The owner/architect moved from initially being a farmer to a home-based architect with fully operational offices with four computers.

The owner's needs were easily accommodated in the design and development of the renovations with no problems with local by-laws or codes.

Multiuse Residential Development

Project Title:	Marsh Hill Farm	
Contact:	Elizabeth White, Architect	
Address:	R.R.#4, Sterling, Ontario K0K 3E0	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Detached/Renovation	Rural/farm	Completed
Building Description:	• Country home with addition of office. Equipment includes 5 workstations, 3 phone lines, additional computer facilities • 4,000 sq. ft. with 24 x 20 office space • Staff of 3-4	
Design, Zoning, Code Issues:	• None, rural zoning provided full flexibility of designated office space • Isolated area	
		CASE: 13

Case Study 14

Rural Hybrid Community
Silvermoon Innovation Park

Developer: Jim McCarvell,
Innovation Park
405 Briar Hill Avenue,
London, Ontario
N5Y 1P3

Silvermoon Innovation Park is a residential/commercial development located just north of the 401 Highway in the Dorchester area, 2 km. from the City of London Ontario.

This is the only residential development in an area zoned for agriculture. The location straddles the market area of The City of London and numerous rural communities. A large car plant (CAMEE) is located in the area. The original parcel of 44 agricultural acres was rezoned for 33 one acre lots providing 2000 square foot residential area and 2000 - 4000 commercial space per residential/commercial unit. The largest dwelling unit is 5000 square feet with 2000 feet of residential and 3000 square feet of commercial space. The developers guidelines state the 51 percent of square footage be commercial/industrial with no more than 49 percent be residential.

Municipal zoning is "light industrial" which allows for limited outside storage of commercial material. Materials must be enclosed by an opaque screen fence at least 1.8 meters in height or a planting strip of continuos shrubs or trees with a minimum height of 2 meters. No outside storage is permitted for lots facing the concession road or abutting highway 401.

No loading of goods is permitted within any required front yard. Loading is only permitted on lots with exterior side years . The dwelling's facade remains residential with lower levels housing the commercial/industrial activity. Product acceptance has been "good". Negotiation with the township began in 1986 with building in 1989, not all units have been sold. The developer suggests that this is a result of a soft residential and commercial real estate market in Ontario.

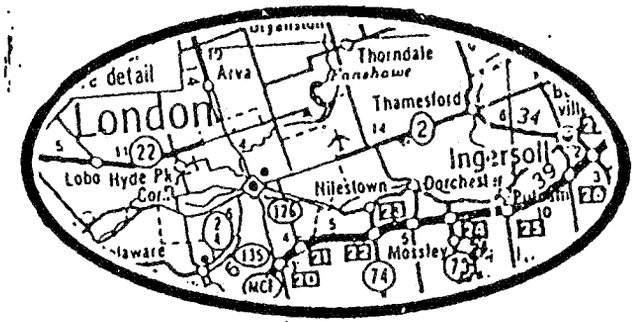
Profile of buyers are primarily double income families, entrepreneurs with families and young children. Work activity is light industrial and trades as opposed to professional and consultant Sample businesses include: contracting, inventor, manufacturer of candy, aluminum siding firm, specialty food manufacturer, and silk screening operation. Taxes for the commercial operations are assessed by the value related to the portion of the commercial versus residential units. The builder notes however, that taxes remain too high for the business operations and is currently fighting the existing tax levied.

Project Title:	Silvermoon Innovation Park	
Contact:	Jim Corvell, Real Estate Agent, Developer	
Address:	405 Briar Hill Avenue, London, ON N5Y 1P3	
Building Type	**Location**	**Stage of Completion/Vacancy Rate**
Commercial/Residential Development	Satelite rural Dorchester, Ontario	Partially Completed
Building Description:	• 33 acre parcel, units allow for 1 unit per acre • 2,000 square feet residential; 2,000-4,000 square feet commercial space • Residential facade • 2 - 2½ storey, ranch designs • Provides for "light industrial" commercial work	
Design, Zoning, Code Issues:	• 51% business usage, 49% residential usage • Problem for home owners securing insurance on commercial mortgages, small business lending act and farm aid programs conflict • Heavy tax assessment due to residential/commercial buildings	

CASE: 14

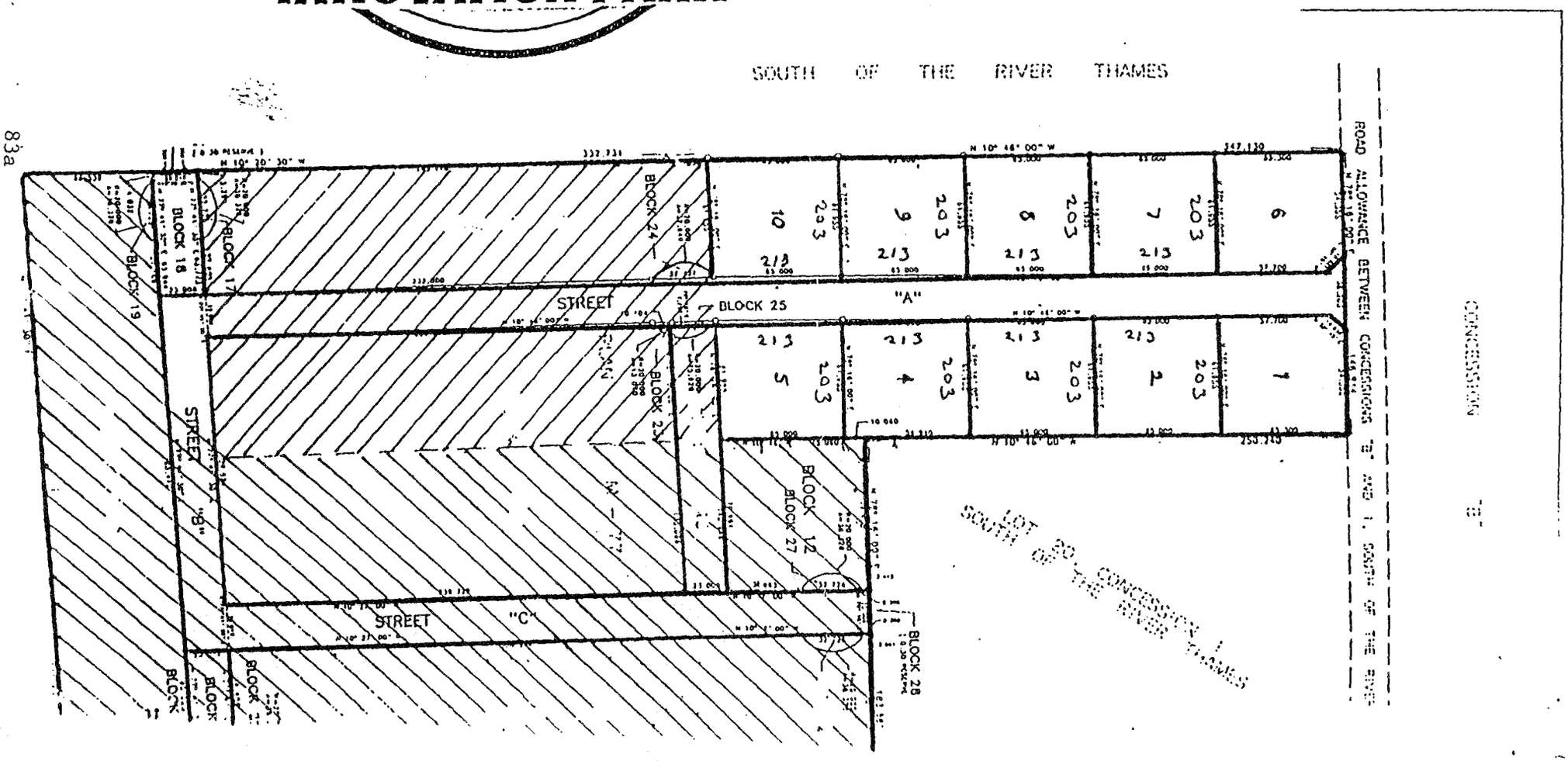
SILVER MOON

INNOVATION PARK



83a

SOUTH OF THE RIVER THAMES



18a .3. ZONE PROVISIONS

DRAFT

18a.3.1 Minimum Lot Area:
4000 square metres

18a.3.2 Minimum Lot Frontage:
50 metres

18a.3.3 Minimum Lot Depth:
60 metres

18a.3.4 Minimum Yard Requirements:

Exterior Side Yard		10 metres
Interior Side Yard		10 metres
Front Yard		10 metres
Rear Yard	a)	10 metres

b) where the rear of a lot in this zone abuts a zone other than industrial or commercial, a minimum of 4.5 metres of the rear yard shall consist of landscaped open space.

18a.3.5 Maximum Lot Coverage:
- 50 percent

18a.3.6 Minimum Landscaped Area:
10 percent

18a.3.7 Maximum Building Height:
15 metres

18a.3.8 Minimum Building Area:

a) 90 square metres gross floor area with no accessory dwelling unit.

b) 130 square metres gross floor area with an accessory dwelling unit.

18a.3.9 Outside Storage:

a) In a Light Industrial (LM1) Zone, any storage of goods accessory to the main use of the lot, except employee or customer parking, carried on outside a building shall be enclosed by an opaque screen or fence at least 1.8 metres in height or a planting strip of continuous shrubs or trees having a minimum height of two (2) metres. Such storage shall not be permitted in the front yard.

b) For lots with an exterior yard on Concession 1, no outside storage is permitted in the exterior side yard.

c) For lots or blocks with rear yards abutting Highway 401, no outside storage is permitted in the rear yard.

18a.3.10 Loading Space:

Loading spaces are required in accordance with Section 6 except:

a) no loading space shall be permitted within any required front yard.

b) no loading space in the exterior side yard shall be permitted on lots having an exterior side yard on Concession 1.

c) no loading space shall be permitted in any rear yard of lots or blocks with a rear yard abutting Highway 401.

18a.3.11 Accessory Dwelling Unit:

An accessory dwelling unit being clearly accessory and incidentail to the industrial use shall be permitted in a Light Industrial (LM1) Zone provided that:

a) it be erected in the main building; and

b) it be designed, used or intended for exclusive use of a caretaker, watchman, security guard or owner of the main use which it is accessory to; and

c) it have minimum dwelling unit areas in accordance with section 14.6 except the maximum allowable square metre area for the dwelling unit will not exceed 110 square metres.

d) shall not exceed the gross floor area used for industrial uses.

18a.3.12 Parking Area Locations:

a) Notwithstanding Section 7, no parking area is permitted in any front yard.

18a.1.13 Accessory Retail Use:

A retail use being clearly accessory and incidental to the industrial use shall be permitted in a Light Industrial (LM1) Zone provided that:

a) it be located within the main building or unit occupied by the industrial use; and

b) it not exceed twenty-five percent of the total floor area of the main building unit.

Thousands of Cottage Industries will succeed in this subdivision:

- Craftsmen shops like woodworkers, glass specialists, ceramic mould manufacturing, leather fabricators, stone carvers, plus many more.

- Service and sales shops for plumbers, carpenters, electricians, commercial painters, bricklayers, heating and air conditioning, automotive, dry wall installers, contractors plus many more.

- Wholesalers of commercial, industrial, or agricultural products including mail order business and sport equipment.

- High tech firms relating to electronics, solar, robotics for research, manufacturing or assembly.

- Sign makers, print shops, roof maintenance, catering companies, veterinary hospital or animal clinic, warehouses, greenhouses, plus many more.

IV. Summary of Findings and Conclusions:

A. Review of Literature:

(i) Limited Research:

The review of literature on hybrid design suggests that documentation and research in North America is limited. No Canadian studies on home-based residential development are cited. Study documentation of mixed-use residential development and home-based work is limited to two seminal studies titled "Hybrid Housing" and "Blurring Boundaries: Social-spatial consequences of Working At Home", authored by Sherry Ahrentzen, Centre for Architecture and Urban Planning Research, University of Wisconsin-Milwaukee. Using American data, Canadian Penny Gurstein provides a second important perspective on the social issues and management of time in home-based working households in "Working At Home and Living At Home: Emerging Scenarios, The Social Life of Households".

Related literature which addresses design and policy issues of home-based work appears in the context of urban redevelopment and models of community design. Van Ryn & Calthorpe (1986) present an analysis of sustainable development or a "bottom up" approach to community design, moving the single dwelling unit into the broader community context. These concepts are exemplified in the British Columbia, Bamberton Development case. At the time of writing, this Canadian development remains on the drawing boards but, nevertheless, presents an interesting model of a sustainable community, which attempts to integrate work and living, supported by an ecological infrastructure. The developers envision "sustainable" to include, residential units that provide for home-based work, resource management which minimizes refuse and the development of the eco-tourism market to attract outside dollars into the community. The Bamberton Case Study is considered by the author of this study to be an example of innovative, cutting edge design in the Canadian hybrid housing market.

The lack of other related studies is somewhat surprising given the increasing number of articles on home work. A recent review of literature between 1986 and 1989 noted 47 citations using "home-based business" as the search criteria (Orser and Foster, 1992). Between 1989 and 1992, 335 citations were found using a similar search - a 820% increase (Roberts, 1993). Roberts notes that much of the recent material is part of the sociological literature, focusing on "how to" or the emerging economic backlash. This suggests that while both academic and popular interest in the topic area is high, the implications for both housing policy and residential design may not be perceived as important public issues or that the literature and topic of study are in its infancy. At the same time, the definitional

criteria noted in the above research supports an emerging language and typology of hybrid development design.

(ii) Spatial Boundaries of Home Work

The literature suggests that spatial and structural boundaries which delineate commercial and domestic work are an important element to hybrid design helping to minimize role and activity conflict. Further, Gurstein (1991) suggests that boundaries in the home workplace are not only spatial, but temporal, behavioral and psychological.

"Conflicts between family and work roles have been identified as a major problem for homeworkers and these conflicts have been observed to be manifested spatially and temporally. Since homes have not been designed to allow work to be conducted, this work has to be done in spaces designed for other uses. Clients visiting the home contribute to conflicts since the normally private home must assume a professional identification. When these conflicts cannot be resolved, the merging of roles and the merging of spaces, are causing disruptions in the associated home. This has an affect on the delineation of the private and public realms of the home."

Other American research (Campbell 1984) finds home workers assess their space availability and consciously "zone" the household into living, sleeping and working areas.

"These zones will be useful not just as design aids, but as a psychological aid in combating the vestigial feeling that work in the home isn't real work. When you have a work zone, you no longer feel that you're working in a corner of the family room; you're in your office."

In a study on socio-spatial consequences of working at home, Ahrentzen (1987) notes that when individuals begin to work from home, generally they do not move to a new residence to accommodate a work setting, but rather adapt to their current home.

The above research findings are consistent with the hybrid case studies that suggest that hybrid design is tailored not only the nature or type of work undertaken but also the lifestyle and potential work or domestic conflicts of the home owner.

For example, Brown and Story Architect's main street hybrid design (case study 5) allows the resident the opportunity to feel a part of main street life with open access to the main thoroughfare and/or the opportunity to "turn off" main street and create a more residential feel to the dwelling with an interior courtyard setting facing more residential like facades. The residential renovation of the Gotkin House (case study 9) is a second example of complementing styles with consistent upscale residential and commercial interior design .

B. Building Code and Municipal Regulation

Building code and municipal regulatory issues were raised by seven of the case study respondents. Topics included the length of time taken to amend existing by-laws, variances in the definition of "home work", limitations on commercial floor area, parking and vehicle traffic, the refuge and storage of commercial materials and fire/exiting regulations.

(i) Variances to Existing By-laws

The time required to adjust for variance in standard building code and by-law provisions varied up to a maximum of five years. The Venice Renaissance project (case study 6) included 14 public discretionary hearings and dozens of informal and formal meetings with community groups. All respondents who noted municipal concerns expressed frustration with the inflexibility of the building code and municipal review process which resulted in: cost and time overages and difficulty in securing a builder.

Three of these same respondents also commented on the need for designers and builders to work with city engineers, municipal officers and public interest groups "in good faith" to create appropriate variance requirements.

Two projects were awarded "bonus" variances for reciprocal contributions to the community such as non-site street improvements, privately subsidized housing and improved public park facilities.

(ii) Definitional Considerations

There appears to be significant variation among municipalities in terms of the receptiveness of hybrid design and development. Municipalities also differ significantly in the types of permitted commercial activities in the home. For example, some municipalities designate allowable home work and businesses into "types" to simplify administrative procedures and establish operating parameters on certain occupations. Sample Canadian "types" of occupation include: minor and major home occupations (major providing for more that three people other than members of the family to reside on the premises as employees), private office or studios, office-in the home, home crafts, personal services, bed and breakfast, day cares, retail home occupations, restaurants and small appliance repairs.

In attempting to deal with the hybrid live/work space for artists, Heitchu (1992) suggest that hybrid design and home work should be accommodated as a new occupational category to allow flexibility in both building code criteria and municipal regulatory process. This might avoid the use of specific definitional criteria or typologies of work which are fluid and transitional for home workers.

Recent municipal by-law review committees (Mission, B.C.; Markham, Ontario; Beaconsfield, Quebec) are favoring performance standards to control the nature, scale and extent of the home occupation by minimizing the size and visibility of the commercial operation to the local neighbourhood.

(iii) Minimal Room Sizes:

Several designers noted that existing building code requirements significantly reduce the flexibility in design for combined living and working space as workspace is often accommodated in addition to a predefined minimum residential area. Three designers commented that it may be appropriate to permit lower amenity requirements such as shared bathrooms and/or kitchens or reduced natural light requirements. These changes were thought to reduce construction costs and optimize space availability.

For example, minimum room size requirements were an obstacle to building approval of the inner Vancouver warehouse development. This hybrid development targeted to the city's artistic community, provides for no more than 30 percent square footage for residential use (case study 1). One of the methods used by the developer to ensure that the units are inhabited by artists is to limit the residential coverage/usage area.

"One problem experienced in some cities permitting artists' live/work studios is that studios are sometimes occupied by non-artists. Requiring that studios be occupied only by artists has proven difficult to enforce. In some cities the occupancy of studios by non-artists has led to a reduction in the availability of affordable and appropriate studio space for artists due to increased rents and an increased on the displacement of viable industrial operations. To address this risk, the recommended zoning provisions require the development of a physical facility which would be attractive to few individuals other than artists. The proposed zoning requires that a minimum of 70 percent of the combined studio and residential quarters be devoted solely to art production. The City (of Vancouver) is on a firmer legal footing regulating the physical development of buildings than attempting to the hopeless pursuit of attempting to distinguish between artists and non-artistis" (City of Vancouver Planning Department, 1987).

(iv) Limitations on Commercial Floor Area:

Many municipalities restrict the gross floor area with in the home than can be used for business or commercial purposes. A general rule of thumb may be that no more than 25 percent of the total residential floor space is permitted for commercial purposes.

This criteria, however, is not consistent. For example, in the case of the Vancouver warehouse studios (case 1), a maximum residential square footage of 30 percent is deemed appropriate. As noted earlier this deters alternative use of the subsidized artists' space.

v) Materials and Fire Code Standards

Hybrid design often combines the requirements of both residential and commercial building codes. This is particularly evident in fire load standards.

The Venice Renaissance Project (case study 6) uses a combination of commercial structure and residential framework. The three levels of wood-framed construction house the 89 residential units. These residential portion of the building rests on a concrete-and-steel base that provides for 26,000 square feet of leased retail space and three levels of parking.

Similarly, the Vancouver retail gallery, workshop, office and private residence (case study 2) uses commercial or warehouse standards in a block foundation with steel reinforcement with a standard residential wood frame on the upper level. This meets the city's residential and commercial fire and seismic requirements. Commercial smoked glass partitions are used on the main floor and in the galleries retail frontage to enhance the visual dimensions of the 25 foot width and 1,000 foot depth of the unit and to comply with a variance on retail sprinkler system requirements. More traditional drywall partitions are used on the second and third floors with proportionately more residential usage.

Brown and Story Architects (case 3 and 4) suggest that existing fire codes are a significant barrier to innovative design for multilevel or mixed-use main street development. "The success of the two exit/corridor philosophy in reducing fire related casualties has not been proven to be better that of the European model, where a single stair exit coupled with the concept of a safe haven is used. This philosophy contends that the threatened resident is safer to stay inside a fire proof and smoke sealed apartment unit with a balcony or a window through which rescue is possible."

The architects suggest that competitive design initiatives such as the main street regeneration project should incorporate modifications to the current building code with demonstration of the single stair/safe haven concept.

(vi) Site Plan Features:

Site plans allow municipalities control over site plan features such as house or unit location, landscaping, fencing, loading, parking, walkway lighting and other design elements.

For example, Silvermoon Innovation Park designates maximum lot coverage of dwelling as 50 percent and minimum landscape coverage of 10 percent.

(vii) Parking and Vehicle Traffic

Consideration was given to parking location, weight of vehicles and parking schedules. This is consistent with the literature which suggests that the negative impact of traffic and parking is considered by American municipal officers as the

second largest issue next to noise, glare and odor for home businesses (Butler & Getzels, 1985). Most zoning ordinances establish standard parking criteria and appropriate residential parking by lot size. Commercial traffic is usually considered "overage" to acceptable standards.

Parking issues may not be only a "problem", but also an opportunity. In the Venice Renaissance, the developer provided additional public parking for beach visitors to gain community support for the building.

In another example, Edmonton's Rivervalley Development (case study 4) was permitted narrower streets in order to fit with the Victorian style of the development. In contrast, the proposed Bamberton development will discourage any automobile transportation and parking.

(viii) Refuge and Storage:

Exterior storage was accommodated with suitable provisions. In the Silvermoon case example, the by-law allows for outside storage of goods providing that:

"Any storage of goods accessory to the main use of the lot, except employee or customer parking, carried on outside a building shall be enclosed by an opaque screen or fence at least 1.8 meters in height or a planting strip of continuous shrubs or trees having a minimum height of two (2) meters. Such storage shall not be permitted in the front year."

The amount of refuge and required storage is dependent on the type of business operation. For example, in a Canadian survey of full-time home-based business owners, only half require "some" equipment storage while less than one quarter use outside storage for business purposes. This likely reflects the fact that over half are involved in the service sector (Orser and Foster, 1992).

One planning official further suggests that the anticipated type of residential work may require provision for industrial ventilation standards. In the case of the Vancouver live/work design:

"Every building or part of a building in which there may be develop, by reasons or use or occupancy, dust, fumes, gases, vapor or other impurities or contaminants that may create a fire or explosion hazard, shall be provided with an exhaust ventilation system in conformance with the appropriate requirements ... Systems servicing spaces that contain sources of contamination shall be designed in such a manner as to prevent spreading of such contamination to other occupied parts of the building and surrounding areas. e.g. ventilation systems may have to be designed as to keep air from circulating between units, including through recirculation. This would affect heating costs" (Heitshu, 1992).

C. ELEMENTS OF HYBRID DESIGN

(i) Design Versatility

Home work is often not limited to only one room. Ahrentzen (1991) finds that 72 percent of home workers surveyed use spaces other than the office or designated work area(s) in their homes. The most frequent "other" locations are the dining room or dining room table, the living room (some specifying the sofa and the floor), the kitchen and kitchen table. Many mentioned they would like to work outdoors but are unable to use a computer there.

Several of the case designs include rooms which are versatile in their designated usage. For example, Devries incorporates fluidity of usage in a second floor "dining area" and/or "board room area" which is part of the three floor hybrid dwelling (case study 2).

Steven Fong's design provides an example of innovative home/work design complying with space constraints. Fritz DeVries gallery and office design further exemplifies tailored, dual purpose commercial/residential development. The case also demonstrates a multiple income household, one in which more than one family member requires customized home/work space.

The Gotkin House is an example of a more upscale, basement office concept using multiple workspaces and state of the art, home office technology. If room is no issue, the rural design of Elizabeth White supports the idea of multiple work stations accommodating up to five employees servicing an urban clientele.

The Silvermoon Innovation Park moves the home work concept out of the professional, service sector which requires often minimal space and integrates light industrial use into up to 5,000 square foot units. The home office moves from a detached single unit to a complete community design.

(ii) Spatial Separation

The more commercial the nature of the work, the more evident the spatial separation. In other words, discrete service operations or administrative activities which are not obtrusive are more likely than industrial and other commercial activities to be located on floors of household activities.

For example, Silvermoon Innovation Park (case study 14) permits light industrial work and "splits" work activity to the lower level and living space on the upper floors. This accommodates deliveries, parking, backyard storage, etc. In case study, the workshop, polishing room, storage room, retail section, and office are located on the ground floor, the second room provides a separate entrance which houses the boardroom, an architects office, bedroom and sitting areas. the third

floor designate includes living area with the living room, dining room, bedroom, office etc.

A second consideration in the relationship of space and design is the amount of time and the nature of work a resident is engaged in. The literature suggest that most home-based business owners spend only a portion of their day working in the household dwelling. The amount of time spent in the home is also dependent on the nature of the work.

(iii) Electrical and Communication Requirements:

Upgraded electrical supply, high capacity telephone lines and two way cable communications are deemed requisite for the state of the art home office. In the case of Marsh Hill Farm (case study 13), this rural residence supports five work stations and three phone lines. Hybrid design incorporates flexibility for work station size and location with multiple electric and phone outlets as evidence in the modular office design of case study 11.

Office design often incorporates flexibility for future telecommunications needs as there appears to be a **graduated** equipment purchase behavior process for home-based business owners, from first a business telephone line, to computer, then fax and later a printer. In a Canadian survey of 190 full-time home-based business owners, 66 percent own a computer while 22 percent intend to acquire one; 60 percent use a business telephone line while 14 percent intend to acquire; 32 percent own a fax machine while 32 percent intend to acquire; and 25 percent own a photocopier while 27 percent intend to acquire one (Orser and Foster, 1992).

(iv) Lighting and Heating:

All hybrid case designs allowed for ample natural lighting for energy efficiency. Skylights were used to enhance limited space. Too much natural lighting, on the other hand, is an issue for home workers using telecommunications technology as glare makes it difficult to read a monitor.

Energy efficiency includes temperature control of the dwelling at certain times of the day to allow work areas versus living areas to be heated/cooled appropriately.

D. Conclusions: The State of Hybrid Housing in Canada

The case research suggests that to date, there are very few, operational hybrid developments. The limited number of case examples noted suggest that hybrid design is in its infancy.

The number of owner/designer case examples may reflect that those most able to create a home/work space do so. It may also reflect survey bias as case studies were identified through a number of professional builder and architectural associations.

Large scale, Canadian inner-city hybrid development may be limited to competitive designs and several western case examples. Edmonton's River Valley Estates Development integrates work in a more traditional, out of home small business development centers within the same development block.

In Montreal and Vancouver's artistic warehouse design exemplifies the opportunity of inner city regeneration of existing space, tailored to specific professional/residential needs. This B.C. case study is a good working model for other cities such as Toronto which are currently exploring similar industrial/residential development to suit an artistic clientele.

Brown and Story Architects' Toronto and Pittsburgh mixed-use designs demonstrate innovative thinking that challenges the nature of the owner/tenant relationship as the tenant and builder share an interest in the tenants commercial successes or losses. The designs accommodate work undertaken in the residential unit itself or on site commercial premises. Store frontage integrated in the residential unit in the main street development design provides a contemporary look to the traditional "home over the shop" design of past years.

In regards to housing code and municipal development policy, the case studies suggest a need for more flexibility within the traditional zoning categories, providing for a mixed use or residential/commercial category of usage. Building codes, which often set precedent for these municipal by-laws need might also be reviewed to investigate their covert bias to traditional housing design.

The issues around hybrid housing are complex. The review of literature suggests that housing design is not passive to the interplay of situational factors. The influences on design, spatial separation of domestic and commercial activity and requisite technology create the need for adaptation and adjustment to the home. Further research on the topic of hybrid housing might investigate the interrelationship of such topics as: the changing structure of Canadian employment, technology and home work, family composition, urban to rural migration patterns, and land supply (space availability and affordability) as these topics relate to government tax and economic development policy i.e. capital gains and small business tax, main street development, eco-community design and municipal planning and development.

Hybrid projects currently in development i.e. Bamberton Development should be monitored to document its success, obstacles and impact on the hybrid market, Research might also explore the impact of telecommunications on residential design, urban versus rural telecommunication opportunities and ecological implications for hybrid design and resultant housing policy.

APPENDICES

Appendix A Glossary

Barrier-Free Housing:

Residential design which enables disabled residents to be active, contributing members of the community.

Collective Housing:

Shared housing which includes joint usage areas and facilities for residents who also maintain their individual households.

Cottage Industry:

Small entrepreneurs working independently in their homes using either family or employed labor to produce a commodity on a small scale.

Earth Sheltered (Underground) Homes:

Below grade level residential units. Benefits include: an energy efficient and environmentally-friendly living, more efficient land use, less noise, security, protected from some natural disasters, sensitivity to local climate, topography and site conditions.

Electronic Cottaging:

Computer mediated work by both corporate employees and the self-employed.

Home Enterprise:

A profit oriented home business for the production or distribution of economic goods and services.

Home-based Business:

A unit of production centered in the home for the production or distribution of economic goods and services.

Home Work:

Any employment or work undertaken in the home, garage or adjacent dwelling for financial remuneration.

Mobile Homes:

Single-family dwelling units which are manufactured and finished at a factory, designed to be transported most often to a permanent site.

Senior Housing:

A variety of housing alternative tailored to meet the appropriate and affordable needs of seniors. options include home retention and modification; retirement communities; garden suites; granny flats and congregate housing.

Sustainable:

Implying balance and permanence; a balance between people living in a community and the jobs available; balance of resources and consumption.

Telecommuting:

The use of telecommunications technology/information technology to permit individuals to work away from the traditional place of employment.

Telecottaging:

A generic term for a rural information technology center. Other terms include: telebureau, business exchange, electronic village hall and community tele-service center.

Underground Economy:

The transaction of goods and services on a cash basis to consciously avoid payment of tax.

APPENDIX B: Typologies of Mixed-use Residential Design

Emerging from the cases are several typologies of design which include not only household hybrid "type" but also "hybrid urban form". A brief description of each of these new typologies follows:

The Community Development Context:

(i) **Rural Light Industry/Commercial Hybrid**

Residential/commercial parks located outside major urban cities allowing for light industrial activity in a residential dwelling. By-laws control the commercial performance and appearance of the dwelling.

(ii) **Inner City Commercial Hybrid Design**

Designated inner city regeneration areas which incorporate both residential and commercial occupancies within the building design.

(iii) **Main street Community Design**

Hybrid development located on major thoroughfares which front commercial, often retail space and back residential space.

Both the inner city commercial hybrid design and main street design initiatives redefine the housing/working relationship by assuming that they are one and the same. The interactive relationship between builder and tenant is "reciprocal" in that both the tenant and builder have a stake in the commercial and residential aspects of the development.

Residential Design Context:

(i) **Warehouse Adaptation**

Hybrid space created in regenerated warehouses for specific occupational undertakings such as art, dance and photography.

(ii) **Modular/Mobile Workspace**

Work space which provides flexible and mobile office support such as shelving, lighting, desk tops, etc.

These typologies and other hybrid typologies support the concept of a new category of major occupancy of the residential worker. In a seminal research study on hybrid homes, Ahrentzen (1991) provides a foundation for hybrid housing typology. In labeling or qualifying the typologies of hybrid type and urban form, marketers can further segment and qualify product features and attributes to better meet emerging customer need .

Hybrid Housing Typology
(Sherry Ahrentzen, 1991)

Adaptable Workspace: Several of the rooms and spaces in the residence are designed with no designated function, but are intended for use as either workspaces or residential spaces, depending upon tenant's choice.

Bedroom Replacement: Workspace is an indistinguishable room in the home, equivalent in size and location to bedrooms of house. Entry is from a corridor or foyer.

Converted Attic:

Workspace is on the top floor, replacing attic space. It may be the size of one room - with the rest of the attic space being open storage - or it may extend across the entire attic floor. It is not this type if the workspace is only one room among other live-in spaces/room in the attic.

Converted Garage:

The workspace includes all of the space that was formerly the garage. Includes both attached and detached garage structures.

Dogtrot:

The two areas for business and residence are on either side of a central foyer in which the public entry is located.

Foyer Appendage:

Workspace is directly off lobby or foyer of street of home., Workspace is approximately the size of the bedrooms. the massing of the workspace is indistinguishable from the massing of the rest of the home.

Grafted Workspace:

The workspace massing is distinct from the rest of the structure and appends the residence on the ground floor. Workspace can have a separate entrance.

Integrated Workspace:

The workspace is not a separate room but shares spaces with other daily residential functions (e.g. combined living room/studio; combined entertainment room/workroom). In essence, there are no fixed boundaries (i.e. walls, partitions, floor level changes surrounding the workspace from other residential functions.

Office Den:

Workspace is an indistinguishable room in the home, usually slightly larger than the bedroom. it is located (and entered) away front he bedroom zone of the home and closer to more "public" residential rooms, such as the living room, kitchen and public entry. it may be entered through a corridor or another room in the interior; it does not have an exterior entry. Its location is an integral part of the plan, not offset in the residential massing in a significant way.

Office Treehouse:

The workspace is on the uppermost story - it is the only room on that story-which overlooks the rest of the house and/or the outside. The massing of the uppermost story differs (e.g. smaller) from massing of the lower floor(s). Completely enclosed. Workspace is enclosed entirely by walls. Partially open: workspace has at least one open side which overlooks interior room(s) of residence. This can be characterized as a mezzanine loft.

Saddlebag:

The two areas of business and residence, each with its own outside entry, are placed side by side (entries are on the same side of residence). Overall massing of the home, however, si the same.

Separate Structure:

The workspace is physically distinct from the residential structure but remains on the residential lot.

Shotgun:

Workspace at End: rooms aligned. behind each other, with the rear room being workspace. The residence may have a corridor on one side. Reverse: rooms aligned behind each other, with the front room (facing the public street) being the workspace. The residence may have an interior corridor on one side.

Stacked: House-over-shop:

All of the living quarters are on the second and/or upper level(s): the workspace is on the street level and occupies an entire floor (except for possible bathroom or utility rooms). Workspace entry faces a public street or public pathway. Sometimes the workspace itself is quite grand, reflecting a "house-over-showcase" type.

Workspace Corridor:

The workspace is narrower than standard rooms, because of its placement in the plan, the workspace connects-as a corridor-other spaces of the home. It can be open on one side to others rooms of the house on the same level or level below.

Workspace Showcase:

The workspace showcase is a significant "attraction: of the home-generally because it is larger in size or volume than the other rooms. The workspace usually stretches the entire width of the home, but does not occupy an entire floor. The interior entry may be larger than a standard floor. There may be an exterior entry to the workspace.

In addition, two categories of hybrid houses were distinguished because multiple workspaces or multiple employees in the home. Each hybrid house following into one of these categories, described briefly below, is additionally classification by one or more of the types listed previously.

Dual Workspaces:

The type can have several different configurations but is unique in that there are two major workspaces (does not include waiting room, recreation or storage areas) in the residence - one for each business in the home.

Office Atelair:

This type can have several different configurations, but the home includes a large workspace that accommodates several employees.

MULTIUSE RESIDENTIAL DEVELOPMENT AND HOME/WORK SPACE

Introduction:

Goodmorning/afternoon, my name is Professor Orser and I am calling from Toronto, Canada to request assistance in a research project investigating home-based work and residential architecture. This project will document the types and the extent of private sector commercial housing developments targeted at home-based business proprietors.

This interview will take about ten to fifteen minutes. Your information and input on the topic is important.

May I begin by asking you several questions about the _____ project. Has your firm completed more than one residential space development that includes work space?

(If so, complete no more than two questionnaires per respondent)

If Yes (Continue)

If no, is there any other member of your firm that I may speak to about this research project? Thankyou.

Respondent Information:

Date: ***Time:***

Firm Name: ***Address:***

Type: *Architectural Design*

Real Estate Agent
Interior Design
Other:

Builder: -
Commercial
Residential

Site Locations and Characteristics

I will begin with a general question about the project characteristics and site location.

1. *Please describe the number of sites, number of buildings and number of units contained in the_____ development.*

2. *Could you please describe the types of dwelling units in the development? (Read List)*

3. *What is the average lot size of the building/house? What is the average square footage of each dwelling unit?*

4. *And now what is the average square footage of the designated home work space in each (of the) dwelling type(s)?*

(Complete for Q. 1 - 4).

Building Type	*Number of Units/Bld.*	*Tenure**	*Average Lot Size Unit*	*Average Sq. Ft. Dwelling*	*Average Sq. Ft. Workspace*
Detached					
Semi-detached					
Row House					
Apartment (# of Floors)					
Mobile Home					
Other:					

**Tenure includes: Freehold/ Condominium/ Cooperative/ Rental*

5. *Does the development include co-operative or shared space and facilities. (If yes, please describe).*

6. *Now please describe the location characteristics and address of the project (Read List).*

Location Character	*Project Address:*
Downtown	
Inner City	
Suburban - new (1960+)	
Suburban - old	
Small Town/Village	
Countryside	

7. *What is the driving time to public transportation and community facilities? (Pause) What is the driving time to social, recreation and business facilities? (Read list if required)*

Public Transportation	*Community Facilities*
Rail	*Recreation Complex*
Subway	*Neighbourhood Small Bus. Centre*
Major Hyway	*Post Office*
Other:	*Other Business Support Service*
	Local Shopping Area
	Other:

8. *Are there any other features of the community that are important to this particular development project?*

9. *When was the project fully completed? (Pause) What is the vacancy rate? (Pause) What is the average turnover rate? (rental units only)*

Year:	*Vacancy Rate:*	*Turn Over:*

10. *We are attempting to understand if home/work space is an attractive market option. Did you have any problems renting/selling units in this development?*

Building Design and Features

I would now like to ask you several questions about this development's building design and features.

11. *What were the special design features provided for, or in the work space?*

12. *Were any other following also included in the dwelling's original design as a standard or purchase option? (Read list)*

Design Features	*Standard/Optional*
Computer Alcove	
Special Office Lighting	
Security Systems	
Multiple Phone Lines	
Solar or Nontraditional Heating	
Library Shelving	
Building Intelligence/SMART	
Finished Basement	
Other:	

Local/municipal and State Policy

Thankyou for this information. The next part of this interview will include questions about municipal and provincial/state building policy.

13. *What was the original zoning designation prior to this live/work development? (Circle).*

Residential Commercial Industrial Other:

14. *Was this zoning type or density modified to suit your residential/working dwelling units? Please explain.*

15. *Did standard building code suit this development? If not, please explain.*

16. *Did you encounter any resistance or support from the municipal planning or local planning and development department when applying for a building permit. If so, please describe.*
(If yes) What were the planning authorities most concerned about? (Read List)

Noise	*Dirt*	*Advertising*
Parking	*Access*	*Visual Impact*
Traffic Generation	*Hours of Work*	*Other*

17. *A. Did you encounter any support of resistance from local residential or business associations in your efforts to build this dwelling development? B. Were associations active in the local community?*

A. Yes / No B. Yes / No

18. *Are you aware of any unique or new environmental restrictions or by-laws as a result of the home/work development?*

19. *In reflecting on the permit and development process, were there any lessons you learned that would be helpful to other developers/architects of home/work space?*

Purchaser Characteristics and Behaviour

My last series of questions will deal with your buyer's characteristics and future development plans.

20. *Could you please briefly describe your target market(s) in terms of age, household composition and occupation? Does this description fit the actual purchase/renter? Please explain.*

21. *Are there any other characteristics of your target market you think are worth noting?*

22. *Did your prospective residents encounter any restrictions on the following coverage items due to the work space proviso? (Read list). Are you aware of any others?*

Insurance: Fire / Household
Mortgages
Warranties
Other:

To complete this interview I would like to ask three more questions.

23. What was the primary reason your firm/organization decided to develop this residential/work space development?

Client Requests
Market Opportunity
Design Contest
Government Grant
Other:

24. Do you or your firm intend to continue developments in this type of work and living concept? Will you modify your design or approach to this work/space development?

25. Finally, one last question. As this is the first attempt in Canada to document residential/home and work space, would you provide the research project with a copy of the design layout or pictures for inclusion in the study appendix with recognition to your firm.

Yes *No*

CITY OF VANCOUVER
PLANNING DEPARTMENT

Price: $1.00

REPORTS TO COUNCIL

SUBJECT: ARTISTS' LIVE/WORK STUDIOS DATE: JULY 2, 1987

COMMITTEE ACTION:

The Standing Committee of Council on Neighbourhood, Cultural & Community Services had for its consideration a Manager's report dated July 2, 1987, in which the Directors of Planning, Social Planning and Permits and Licenses reported on discussions with the arts community on regulating artists' live/work studios. The report had been prepared in consultation with the Director of Legal Services, the City Engineer, the Manager of Economic Development and the Fire Chief and recommended amendments to the Building By-law, the Zoning and Development By-law and the Downtown Eastside Official Development Plan.

Following the eviction of artists from the upper floors of 339 Railway and at other locations, Council, in November 1986, directed staff to work with the "Artists for Creative Environments" organization on the development of City policies for artist studios and report back. The policies are designed to enable the development of affordable artists' live/work studios and introduce appropriate building and fire safety standards to ensure studios are safe and healthy for occupation by artists. The Fire Chief has been particularly concerned with the threat to life and safety of the occupants of the studios, due to non-conformance with Building Codes.

Of the estimated 500-700 studios in Vancouver, most of which are located in industrial areas adjacent to the downtown, many have been developed without development or building permits and are unsafe. The space used for residential purposes is generally no larger than 200-400 sq. ft. out of a studio that ranges from 500-3000 sq. ft. in total.

There exists a chronic shortage of affordable artist studios in the City. It is estimated 1,500 artists are having difficulty finding suitable space due to factors such as current zoning and building regulations, the unavailability of low-cost accommodation, the lack of central and accessible locations, and the transitional nature of studios in older buildings which are awaiting re-use to higher rent activities or complete redevelopment. The majority of artists view the integration of residential and workshop space as integral to the concept of an artist studio. Benefits to the community are also realized from the merchandise prepared and sold by the artists and from the emerging cultural events.

The report pointed out that from a survey of nine (9) major North American cities, only Toronto has chosen to not permit artists' live/work studios in industrial areas, while the others have attempted to accommodate and encourage development of

artist studios through Zoning and Licensing provisions and relaxations of Building Codes.

Presently, the following City regulations govern artists' live/work studios:

Zoning By-law
- artists' live/work studios are permitted by all Commercial (except C-1) and Historical (except HA-4) District Schedules and most of the Official Development Plans;
- artist studios (without residential) are permitted by all Industrial District Schedules;
- artists may also produce art in homes under the homecraft provisions of City zoning.

Building By-law
- all artist studios are governed by the provisions of the Building By-law and other codes.

To address the deficiencies in these regulations as they pertain to artists' live/work studios, staff recommend that artists' live/work studios continue to be permitted in commercial and historical areas and they also be permitted in industrial areas. It was pointed out the opportunities for appropriate and affordable space are often limited to industrial areas and the majority of existing studios are presently located in these areas. Also, many forms of art production would not be welcome in residential areas due to the noise, vibration, fumes and other impacts of this activity.

To address a problem experienced in other cities, that studios are sometimes occupied by non-artists, the recommended zoning provisions require the development of a physical facility which would be attractive to few individuals other than artists. Staff believe that the combination of enforcement through building provisions (requiring fire, safety and health standards) and zoning will reduce the risk of studios being occupied by individuals who are not artists.

The City Engineer proposed a parking requirement of one parking space for each artist studio and there will be no additional parking requirement for the associated living quarters. Also, the Directors of Planning and Social Planning recommended that there be consideration for relaxing the parking requirement in cases where adherence would result in unnecessary hardship or where there is no opportunity to provide parking spaces.

In conclusion, staff proposed that artist studios with residential use be permitted as a conditional approval use in commercial, historical and industrial districts and that the new provisions be publicized. Further, it was recommended the new policies be approved for a two-year trial period with report back prior to the end of that time. Should Council then decide that artists' live/work spaces should not be permitted in industrial areas, those studios which had received permits could remain as non-conforming uses under the non-conforming use provisions of the Vancouver Charter.

Mr. Michael Gordon, Planning Department, reviewed the report, highlighting the main issues and proposals. He noted the discussions with Artists for Creative Environments (A.C.E.) have been positive and the recommendations are agreeable to both staff and the arts community.

Mr. Brian Lynch, President of the Board, Vancouver A.C.E. Society, told the Committee that A.C.E. is representative of various artist groups in the City and is pleased with the recommendations and the positive tone of the many months of prep-

aration. To ease the implementation process, he suggested the working group be formalized into an implementation committee made up of staff and representatives of the arts community. It was noted that A.C.E. will advise the artist community of the new regulations once in place.

During discussion, a member of the Committee referred to a recent newspaper article about a fire where artists are working and residing. He expressed concern over the potential for such fires in view of the equipment and materials used by artists. Committee members were assured by the Fire Chief that the proposed regulations will provide regular inspections and enforcement for these studios and no relaxation will be allowed when dealing with volatile materials.

The Committee endorsed the recommendations put forward in the report by the Directors of Planning, Social Planning, Permits and Licenses and the Fire Chief, which were approved by the City Manager. It was therefore recommended

A. That the Director of Planning be instructed to make application to amend the Zoning and Development By-law as generally outlined in Appendix B (attached), and that the application be referred to Public Hearing.

B. That the Director of Planning be instructed to make application to amend the Downtown-Eastside/Oppenheimer Official Development Plan By-law as generally outlined in Appendix B, and that the application be referred to Public Hearing.

C. That the Director of Planning be instructed to make application to amend the Parking By-law as generally outlined in Appendix B, and that this application be referred to Public Hearing.

D. That Council advise the Director of Planning to consider the relaxation of parking and loading requirements in cases where such requirements would hinder the provision of affordable and appropriate artist studios.

E. That the Building By-law requirements and relaxations for artist studios, as outlined in Appendix A (attached), be adopted.

F. That upon enactment of the Zoning and Development By-law and Building By-law amendments, the new artist studio provisions be publicized through a pamphlet and public information meeting.

G. That the Director of Planning, Director of Social Planning, the Fire Chief and the Director of Permits and Licenses report back in two years on the impact and adequacy of the new regulations regarding artist studios.

H. That the Director of Social Planning report back on other ways for the City to support the development and retention of affordable artists' live/work studios.

I. That Council approve the establishment of a formal 'Artists" Live/Work Studios Implementation Committee', to include appropriate City staff and members of the arts community.

CITY COUNCIL ACTION:

Vancouver City Council at its meeting on July 21, 1987, approved the recommendations of the Standing Committee on Neighbourhood, Cultural & Community Services, with regard to this matter.

NOTE: It is understood that the following relaxations apply to studios for the use of the artists occupying the residential quarters integrated with the artist's studio. If employees were present, the appropriate commercial building classification requirements would apply.

BUILDING BY-LAW AND OTHER CODE REQUIREMENTS AND RELAXATIONS APPROPRIATE FOR ARTISTS' LIVE/WORK' STUDIOS

1. Buildings up to 2 storeys in height and less than 6,000 sq.ft. in building area will require 1-hour fire-resistance rating between storeys and between suites. (Plus, where there are storeys partially or totally below adjacent ground level, they shall be sprinklered.)

2. Buildings over 2 storeys in height shall be sprinklered and will require 3/4-hour fire-resistance rating between storeys and between suites. Existing lath and plaster will be acceptable if in good repair. (Plus, where the building exceeds 4 storeys in height, the building shall then require 1-hour fire-resistance rating between storeys and suites.)

3. Exits and public corridors shall comply with Building By-law.

4. Emergency lighting and exit signs shall comply with Building By-law.

5. Building fire alarms shall comply with the Building By-law for residential uses (i.e., sleeping occupants) and each sleeping area shall include smoke alarms, not connected to the building's fire alarm, but with smoke detectors in the corridors that are connected to fire alarm system.

6. Dust-emitting operations shall be properly ventilated at the source and electric wiring shall be appropriate for studio use.

7. Flammable liquid and gas storage shall conform with the appropriate standards (B.C. Fire Code or Gas Safety Code).

8. Commercial (i.e., not within studio) service and storage rooms shall comply with the Building By-law.

9. Only hot water, electrical or elevated (vented) gas-fired forced-air heaters shall be permitted in dust- or fume-producing operations.

10. Silkscreening, paint spraying of flammable and combustible liquids and other hazardous processes must be done in accordance with the requirements of the B.C. Fire Code Part 5.

..../2

RELAXATIONS APPROPRIATE FOR THESE STUDIOS

I. A structural survey will only be deemed necessary where existing structural elements are in a visibly poor condition, or changes to the structural elements are contemplated.

II. No sound transmission abatement will be required between suites.

III. No energy conservation insulation will be required.

IV. Light and ventilation may be borrowed from the working studio area.

V. One sleeping loft up to 100 sq.ft. will be permitted within each suite without a fire separation.

VI. Washroom facilities may be shared when installed in compliance with Standards of Maintenance By-law for lodging houses.

VII. Plastic plumbing or sprinkler piping may be exposed within each suite if building is sprinklered with Quick Response Sprinkler heads.

VIII. Electrical outlets may be relaxed to the following:

1 outlet per room
3 outlets per kitchen (each on a separate circuit)
5 outlets per unsubdivided suite (minimum)

ZONING AND DEVELOPMENT BY-LAW AMENDMENTS

1. THAT Section 2 be amended to include the following definitions:

   Artist studio means the use of premises for the production of paintings, drawings, pottery, sculpture, ceramics, video, moving or still photography, creative writing, dance or music.

2. THAT the C-2, C-2B, C-2C, C-2C1, C-3A, C-5/C-6, FC-1, HA-1, HA-2, HA-3, IC-1, IC-2, MC-1, M-1, M-1A, M-1B and M-2 District Schedules be amended to permit "Artist Studio, subject to the provisions of Section 11.18 of this By-law" and "Sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio subject to the provisions of Section 11.19 of this By-law" as conditional approval uses.

3. THAT Section 11.18 be added and include:

   Artist Studio

   11.18.1 - Where an artist studio is combined with a sleeping, housekeeping or dwelling unit, the minimum area for the space solely devoted to art production is 70 per cent of the combined floor area of the Artist Studio and the sleeping, housekeeping or dwelling unit associated with the Artist Studio.

   11.18.2 - Where an artist studio is combined with a sleeping, housekeeping or dwelling unit, the studio may only be used by the individuals residing in the residential quarters associated with and forming an integral part of the artist studio.

4. THAT Section 11.19 be added and include:

   Sleeping, Housekeeping or Dwelling Unit associated with an artist studio

   11.19.1 - The maximum area for the residential premises is 400 square feet or 30 percent of the combined floor space (whichever is less) of the artist studio and the residential quarters associated with and forming an integral part of an artist studio."

   11.19.2 - No more than 2 persons may occupy the sleeping, housekeeping or dwelling unit associated with an artist studio.

5. THAT the C-2B, C-2C, C-5, C-6, HA-1 and HA-2 District Schedules be amended to include, as a condition of use, "no portion of the first storey of a building to a depth of 35 feet from the front wall of the building and extending across its full width shall be used for artist studios or the residential quarters associated with the studios except for entrances to the artist studios and the residential quarters".

..../2

DOWNTOWN-EASTSIDE OPPENHEIMER OFFICIAL DEVELOPMENT PLAN AMENDMENTS

1. THAT the Downtown-Eastside Oppenheimer O. D. P. be amended to permit "artist studio" and "a sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio" in sub-areas 1, 2, 3 and 4.

2. THAT the regulations applying to artist studios and a sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio recommended above for inclusion in the Zoning and Development By-law also be applied to the development of these uses in the 4 sub-areas identified by the Downtown-Eastside Oppenheimer O. D. P.

PARKING BY-LAW AMENDMENTS

2. THAT Section 4.2.1.9 be added as outlined below:

Sleeping, Housekeeping or Dwelling Unit associated with and forming an integral part of an artist studio."	No requirement.

3. THAT Section 4.2.5.9 be added and read:

"Artist Studio	A minimum of one space for each studio."

4. THAT Section 5.2.3 be amended to include "Artist Studio" after the word "Range;".

PLANNING, PERMITS AND LICENSES, AND SOCIAL PLANNING DEPARTMENTS

TO: City Manager (for Neighbourhoods, Cultural and Community Services Committee) 1987 07 02

SUBJECT: Artists' 'Live/Work' Studios

CLASSIFICATION: RECOMMENDATION

The Directors of Planning, Social Planning and Permits and Licenses, in consultation with the Director of Legal Services, the City Engineer, the Manager of Economic Development and the Fire Chief report as follows:

INTRODUCTION

The purpose of this report is to report back on discussions with the arts community on regulating artists' live/work studios. This report also recommends amendments to the Building By-law, the Zoning and Development By-law and the Downtown Eastside Official Development Plan to accommodate artists' live/work studios in the city.

BACKGROUND

On October 21, 1986 Council reviewed a staff report regarding the eviction of artists from the upper floors of 339 Railway Street. The artists had been evicted because their studios did not comply with the Building By-law and the use of the premises for joint living and working quarters was not permitted in industrial areas by city zoning. On November 4, 1986 Council considered a staff report on the use of 560 Cambie Street for artists' studios. Council directed staff to continue enforcement action, report back on other cases where there are problems with artists' studios and to work with "Artists for Creative Environments" on the development of city policies on artists' studios.

Since late 1986, staff have been meeting with representatives of the arts community to develop policies which will:

(i) enable the development of affordable artists' live/work studios; and

(ii) introduce appropriate Building and Fire Safety Standards to ensure studios are safe and healthy for occupation by artists.

Due to the non-conformance with building codes, the Fire Chief has been particularly concerned with the serious threat to the life and safety of the occupants of these studios. The residential use of artists' studios in industrial areas is also of concern because such use is not permitted by the industrial zoning.

ARTISTS' STUDIOS IN VANCOUVER

It is estimated that there are 500-700 artists' live/work studios in Vancouver. Most of these studios are developed in industrial areas immediately adjacent to the downtown due to the availability of affordable, large, open industrial spaces which are suitable for the production of art. In many cases, these studios have been developed without development or building permits and are often found to be in an unsafe condition through joint inspections of the Fire and Permits and Licenses inspection staff.

An artists' live/work studio generally ranges in size from 500 to 3,000 square feet. The space used for the artist's work usually takes up the large majority of the unit. The residential space is generally no larger than 200 to 400 square feet and includes a sleeping area, a living space with couch and chairs and a small cooking and workshop space. They are most often found in pockets in a number of locations east of the Downtown in Gastown, the Downtown-Eastside and industrially zoned districts.

According to representatives of arts organizations in the city, there is a chronic shortage of affordable artist studios. They estimate that there are approximately 1,000 to 1,500 artists either looking for or occupying artists' live/work studios in industrial areas immediately adjacent to the downtown. They say that artists have

difficulty finding suitable space due to a number of factors:

(i) zoning regulations have not permitted the development of artists' live/work studios in industrial areas which are centrally located and contain low rent, large, open spaces suitable for the production of art;

(ii) current building regulations have required standards of safety which require alternative solutions, in the case of artists' live/work studios, to achieve basic health, fire and safety standards;

(iii) artists have low to moderate incomes and seek low cost accommodation;

(iv) artists' live/work studios are often transitional uses in older buildings which are awaiting re-use to higher rent activities or complete redevelopment, and;

(v) artists usually seek central and accessible locations in order to be close to other cultural facilities.

Although residential development is generally not permitted by most industrial areas, the dwelling use of a studio is especially important for lower income artists who cannot afford to rent separate residence and studio spaces. It appears that the majority of artists view the integration of residential and workshop space as integral to the concept of an artist studio.

The arts industry employs several thousand individuals as artists or in related businesses. The arts community also contributes to the livability and vitality of this city. Vancouver's tourist industry and its residents benefit from the merchandise prepared and sold by artists and from the cultural events that emerge from the arts community.

EXPERIENCE IN OTHER NORTH AMERICAN CITIES

Many major American cities have attempted to accommodate and encourage the development of artist live/work studios through zoning and licensing provisions and relaxations of building codes in industrial areas. They have permitted the development of such studios legally through development and building permit processes. Seattle, Los Angeles, San Diego, Calgary, Edmonton, Minneapolis, Boston and New York are among the cities undertaking such action. From our survey of 9 cities, only Toronto has chosen to not permit artists' live/work studios in industrial areas. (See Appendix "C" for further information)

CURRENT REGULATIONS

Although not presently listed as a use, zoning in Vancouver presently permits, as conditional uses, artists' live/work studios in certain districts under Section 3.2.Z of the applicable District Schedules. This section permits the approval of uses not listed anywhere in the By-law, but comparable to other uses listed in a schedule.

The following City regulations govern artists' live/work studios:

Zoning By-law
- -artists' live/work studios are permitted by all Commercial (except C-1) and Historical (except HA-4) District Schedules and most of the Official Development Plans;
- -artist studios (without residential) are permitted by all Industrial District Schedules;
- -artists may also produce art in homes under the homecraft provisions of City zoning;

Building By-law
- -all artist studios are governed by the provisions of the Building By-law and other Codes.

The existing zoning and building regulations do not:

(i) clearly define and recognize artists' live/work studios as a use;

(ii) recognize the desire of artists to both live and work in studio spaces due to the nature of art production or the low incomes of artists;

(iii) recognize the availability of suitable space for live/work studios is often limited to industrial areas where the combination of residential and studio space is not permitted;

(iv) recognize that artists do not desire the same level of amenity required for other types of residential use; and

(v) establish regulations and a procedure to encourage the owners or occupants of existing studios to bring them up to health, fire and safety standards.

REGULATING ARTISTS' LIVE/WORK STUDIOS

The following section outlines staff's proposal for regulating artists' live/work studios. Staff recommend that artists' live/work studios continue to be permitted in commercial and historical areas. It is recommended that they also be permitted in industrial areas for the following reasons. First, the opportunities for appropriate and affordable space are often limited to industrial areas. Second, the majority of existing artists' live/work studios are presently located in industrial areas. Third, many forms of art production would not be welcome in residential areas due to the noise, vibration, fumes and other impacts of this activity. Fourth, vacant space in most historical or commercial areas is often not affordable for artists. For example, artist studios in Gastown, Yaletown and Chinatown are not affordable for the majority of artists.

One problem experienced in some cities permitting artists' live/work studios is that studios are sometimes occupied by non-artists. Requiring that studios be occupied only by artists has proven difficult to enforce. In some cities the occupancy of studios by non-artists has led to a reduction in the availability of affordable and appropriate studio space for artists due to increased rents and an increase in the displacement of viable industrial operations. To address this risk, the recommended zoning provisions require the development of a physical facility which would be attractive to few individuals other than artists. The proposed zoning requires that a minimum of 70% of the combined studio and residential quarters be devoted solely to art production. The City is on a firmer legal footing regulating the physical development of buildings than attempting the more hopeless pursuit of attempting to distinguish between artists and non-artists.

Staff believe that the combination of enforcement through building provisions (requiring fire, safety and health standards) and zoning (regulating the use of the studio) will reduce the risk of artist studios being occupied by individuals who are not artists.

Staff, therefore, recommend the following:

- adopt the Building By-law requirements and relaxations as outlined in Appendix "A"
- amend the Zoning and Development By-law and the Downtown-Eastside-Oppenheimer O.D.P. to permit artists' live/work studios in commercial, historical and industrial areas as outlined in Appendix "B"
- amend the Parking By-law as outlined in Appendix "B"
- enforcement to ensure that studios meet the new provisions of building and zoning regulations
- limit the residential use of studios to artists and their immediate families
- more opportunities for affordable, appropriate spaces for artists' studios

The Director of Planning, the Director of Social Planning and the Director of Permits and Licenses recommend the above for the following reasons:

(i) it should increase the number of opportunities for affordable and suitable artists' live/work studios;

(ii) it requires adequate health and safety standards that also reflect the special needs of artists;

(iii) it discourages the use of studios in industrial areas for anyone but artists and their immediate families; and

(iv) it is one way for the City to accommodate and support the arts community and its important employment generating activities.

PARKING REQUIREMENTS

Based on the parking needs of artists on Granville Island and parking requirement for artist studios in Seattle, the City Engineer has proposed a parking requirement of one parking space for each artist studio. There will be no additional parking requirement for the associated living quarters. The Director of Planning and the Director of Social Planning also recommends that there be consideration for relaxing this requirement in cases where adherence would result in unnecessary hardship or hinder the provision of affordable artists' live/work studios or where there is no opportunity to provide parking spaces.

CONCLUSION

It is proposed that artist studios (with residential use) be permitted as a conditional approval use in commercial, historic and industrial districts. Staff advises Council that there are risks because other cities have found that permitting artist studios in industrial areas can lead to pressures for the conversion of these areas to non-industrial uses. Staff believe that such pressure would be limited to those industrial areas closest to the core. There is also a risk that the studios may be occupied by non-artists. It is believed that this risk is reduced by regulating the physical development and use of the 'live/work' studios. The development of artist studios will be closely monitored in industrial areas to ensure that they are only being used by artists and they are providing affordable, adequate accommodation. It is also recommended that the new provisions be publicized.

It is recommended that these new policies be approved for a 2 year trial period with report back prior to the end of that time. Should Council decide at that time that artists' live/work spaces not be permitted in industrial areas, those studios which had received permits could remain as non-conforming uses under the non-conforming use provisions of the Charter.

Lastly, it is recommended that the Director of Social Planning continue to meet with representatives of arts organizations to explore other ways in which the City may assist in the development and retention of affordable artists' studios.

RECOMMENDATIONS

The Director of Planning RECOMMENDS:

A: THAT the Director of Planning be instructed to make application to amend the Zoning and Development By-law as generally outlined in Appendix "B", and that the application be referred to Public Hearing.

B. That the Director of Planning be instructed to make application to amend the Downtown-Eastside/Oppenheimer Official Development Plan By-law as generally outlined in Appendix "B", and that the application be referred to Public Hearing.

C. THAT the Director of Planning be instructed to make application to amend the Parking By-law as generally outlined in Appendix "B", and that this application be referred to Public Hearing.

D. THAT Council advise the Director of Planning to consider the relaxation of parking and loading requirements in cases where such requirements would hinder the provision of affordable and appropriate artist studios.

The Director of Permits and Licenses and the Fire Chief RECOMMEND:

E. THAT the Building By-law requirements and relaxations for artist studios, as attached in Appendix "A", be adopted.

The Director of Planning, Director of Social Planning and Director of Permits and Licenses RECOMMEND:

F. THAT upon enactment of the Zoning and Development By-law and Building By-law amendments, as described above, the new artist studio provisons be publicized through a pamphlet and public information meeting.

G. THAT the Director of Planning, Director of Social Planning, the Fire Chief and the Director of Permits and Licenses report back in two years on the impact and adequacy of the new regulations regarding artist studios as identified above.

The Director of Planning and Director of Social Planning RECOMMEND:

H. THAT the Director of Social Planning report back on other ways for the City to support the development and retention of affordable artists' live/work studios.

The City Manager RECOMMENDS the approval of the foregoing recommendations of the Director of Planning, the Director of Permits and Licenses, the Director of Social Planning and the Fire Chief.

NOTE: It is understood that no employees will be permitted for the following relaxations to apply. These studios will be for the use of the artists occupying the residential quarters integrated with the artist's studio. Otherwise the appropriate commercial building classification requirements will apply.

BUILDING BY-LAW AND OTHER CODE REQUIREMENTS AND RELAXATIONS APPROPRIATE FOR ARTISTS' LIVE/WORK' STUDIOS

1. Buildings up to 2 storeys in height and less than 6,000 sq.ft. in building area will require 1-hour fire-resistance rating between storeys and between suites. (Plus, where there are storeys partially or totally below adjacent ground level, they shall be sprinklered.)

2. Buildings over 2 storeys in height shall be sprinklered and will require 3/4-hour fire-resistance rating between storeys and between suites. Existing lath and plaster will be acceptable if in good repair. (Plus, where the building exceeds 4 storeys in height, the building shall then require 1-hour fire-resistance rating between storeys and suites.)

3. Exits and public corridors shall comply with Building By-law.

4. Emergency lighting and exit signs shall comply with Building By-law.

5. Building fire alarms shall comply with the Building By-law for residential uses (i.e., sleeping occupants) and each sleeping area shall include smoke alarms, not connected to the building's fire alarm, but with smoke detectors in the corridors that are connected to fire alarm system.

6. Dust-emitting operations shall be properly ventilated at the source and electric wiring shall be appropriate for studio use.

7. Flammable liquid and gas storage shall conform with the appropriate standards (B.C. Fire Code or Gas Safety Code).

8. Commercial (i.e., not within studio) service and storage rooms shall comply with the Building By-law.

9. Only hot water, electrical or elevated (vented) gas-fired forced-air heaters shall be permitted in dust- or fume-producing operations.

10. Silkscreening, paint spraying of flammable and combustible liquids and other hazardous processes must be done in accordance with the requirements of the B.C. Fire Code Part 5.

RELAXATIONS APPROPRIATE FOR THESE STUDIOS

I. A structural survey will only be deemed necessary where existing structural elements are in a visibly poor condition, or changes to the structural elements are contemplated.

II. No sound transmission abatement will be required between suites.

III. No energy conservation insulation will be required.

IV. Light and ventilation may be borrowed from the working studio area.

V. One sleeping loft up to 100 sq.ft. will be permitted within each suite without a fire separation.

VI. Washroom facilities may be shared when installed in compliance with Standards of Maintenance By-law for lodging houses.

VII. Plastic plumbing or sprinkler piping may be exposed within each suite if building is sprinklered with Quick Response Sprinkler heads.

VIII. Electrical outlets may be relaxed to the following:

1 outlet per room
3 outlets per kitchen (each on a separate circuit)
5 outlets per unsubdivided suite (minimum)

ZONING AND DEVELOPMENT BY-LAW AMENDMENTS

1. THAT Section 2 be amended to include the following definitions:

   Artist studio means the use of premises for the production of paintings, drawings, pottery, sculpture, ceramics, video, moving or still photography, creative writing, dance or music.

2. THAT the C-2, C-2B, C-2C, C-2C1, C-3A, C-5/C-6, FC-1, HA-1, HA-2, HA-3, IC-1, IC-2, MC-1, M-1, M-1A, M-1B and M-2 District Schedules be amended to permit "Artist Studio, subject to the provisions of Section 11.18 of this By-law" and "Sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio subject to the provisions of Section 11.19 of this By-law" as conditional approval uses.

3. THAT Section 11.18 be added and include:

   Artist Studio

   11.18.1 - Where an artist studio is combined with a sleeping, housekeeping or dwelling unit, the minimum area for the space solely devoted to art production is 70 per cent of the combined floor area of the Artist Studio and the sleeping, housekeeping or dwelling unit associated with the Artist Studio.

   11.18.2 - Where an artist studio is combined with a sleeping, housekeeping or dwelling unit, the studio may only be used by the individuals residing in the residential quarters associated with and forming an integral part of the artist studio.

4. THAT Section 11.19 be added and include:

   Sleeping, Housekeeping or Dwelling Unit associated with an artist studio

   11.19.1 - The maximum area for the residential premises is 400 square feet or 30 percent of the combined floor space (whichever is less) of the artist studio and the residential quarters associated with and forming an integral part of an artist studio."

   11.19.2 - No more than 2 persons may occupy the sleeping, housekeeping or dwelling unit associated with an artist studio.

5. THAT the C-2B, C-2C, C-5, C-6, HA-1 and HA-2 District Schedules be amended to include, as a condition of use, "no portion of the first storey of a building to a depth of 35 feet from the front wall of the building and extending across its full width shall be used for artist studios or the residential quarters associated with the studios except for entrances to the artist studios and the residential quarters".

DOWNTOWN-EASTSIDE OPPENHEIMER OFFICIAL DEVELOPMENT PLAN AMENDMENTS

1. THAT the Downtown-Eastside Oppenheimer O. D. P. be amended to permit "artist studio" and "a sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio" in sub-areas 1, 2, 3 and 4.

2. THAT the regulations applying to artist studios and a sleeping, housekeeping or dwelling unit associated with and forming an integral part of an artist studio recommended above for inclusion in the Zoning and Development By-law also be applied to the development of these uses in the 4 sub-areas identified by the Downtown-Eastside Oppenheimer O. D. P.

PARKING BY-LAW AMENDMENTS

2. THAT Section 4.2.1.9 be added as outlined below:

Sleeping, Housekeeping or Dwelling Unit associated with and forming an integral part of an artist studio."	No requirement.

3. THAT Section 4.2.5.9 be added and read:

"Artist Studio	A minimum of one space for each studio."

4. THAT Section 5.2.3 be amended to include "Artist Studio" after the word "Range;".

APPENDIX "C"

REGULATING ARTIST STUDIOS IN OTHER NORTH AMERICAN CITIES

Since the mid-1970's a number of North American cities have attempted to accommodate artists in older industrial and commercial buildings through amendments to zoning and building by-laws. Many cities also permit artists to work in their homes as 'homecrafts' where residential is the principal use. The following table summarizes the experience of several cities:

Zoning Regulations in Other Cities	Permit Artist Live/Work Spaces in Residential Zones	Permit Artist Live/Work Spaces in Commercial Zones	Permit Artist Live/Work Spaces in Industrial Zones
Seattle	yes	yes	yes, with temporary 2 year permits; artists must prove that they are artists.
Los Angeles	no	yes	yes, as a conditional approval use, parking requirements are relaxed.
San Diego	yes	yes	yes, in designated industrial areas adjacent to the downtown.
Calgary	yes	yes	yes, in industrial areas adjacent to the downtown.
Edmonton	yes	yes	yes, in industrial areas adjacent to the downtown
Minneapolis	yes	yes	yes, except in high impact industrial areas; no residential use on the ground floor.
Boston	yes	yes	yes, as a conditional use; they are only granted 3 year temporary permits.
New York	yes	yes	yes, in designated Artists' Districts adjacent to the downtown.
Toronto	yes	yes	no, residential use is not permitted in industrial areas.

An issue closely related to the development of affordable artists' live/work studios is the gentrification of industrial areas. It has been the general experience of some cities discussed above that artists' studios are one of a number of "pioneer uses" signalling the eventual up-grading and gentrification of an industrial district adjacent to the downtown. Once gentrification is underway, low to moderate income artists find themselves displaced by higher rent commercial and residential development. These cities have also concluded that no amount of restrictive industrial zoning can prevent the gentrification of industrial areas adjacent to the downtown under sustained market pressure. The availability of land for office and commercial development in the downtown and the vacancy rate for such space are key factors determining the pressure for gentrification. For this reason, cities have supported artists who purchase and renovate old industrial and commercial buildings prior to the gentrication of industrial areas.

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