

## **INFORMATION TO USERS**

**This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.**

**The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.**

**In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.**

**Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.**

**Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.**

**Bell & Howell Information and Learning  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
800-521-0800**

**UMI<sup>®</sup>**



## **NOTE TO USERS**

**Page(s) not included in the original manuscript are unavailable from the author or university. The manuscript was microfilmed as received.**

**17 - 18**

**This reproduction is the best copy available**

**UMI**



**A  
SUSTAINABLE  
URBAN  
NEIGHBOURHOOD  
Bow Valley Centre  
Redevelopment Plan**

**A MASTER'S DEGREE  
PROJECT  
SUBMITTED TO  
THE FACULTY OF  
ENVIRONMENTAL DESIGN  
IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS  
FOR THE DEGREE  
OF  
MASTER OF  
ENVIRONMENTAL DESIGN  
(URBAN DESIGN)**

**by  
Peng Peng**

**October 1999**



**National Library  
of Canada**

**Acquisitions and  
Bibliographic Services**

**395 Wellington Street  
Ottawa ON K1A 0N4  
Canada**

**Bibliothèque nationale  
du Canada**

**Acquisitions et  
services bibliographiques**

**395, rue Wellington  
Ottawa ON K1A 0N4  
Canada**

*Your file Votre référence*

*Our file Notre référence*

**The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.**

**The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.**

**L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.**

**L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.**

**0-612-47653-7**

**Canada**

# **ABSTRACT**

This document was prepared in partial fulfillment of the requirements of the MEDes Degree in Faculty of Environmental Design, the University of Calgary.

Bridgeland-Riverside is an older inner-city community. Since its early days, this community has been a significant ethnically diverse neighbourhood. Because of the uneven growth of the city, its total population has declined in recent years. The closure of the Bow Valley Centre (the formal General Hospital) also has had a strong impact on the local community. Its demolition provides an opportunity to rebuild a healthy urban neighbourhood.

The design scheme experiments with and demonstrates an alternative approach, which leads towards a more sustainable and diverse urban settlement. It celebrates the multicultural heritage and embraces the local traditions and values. The restructuring and reinforcement of the medical components on the site responds to the needs of the surrounding neighbourhoods and maintains the strong identity of the community as a caring and nurturing place. The higher density housing and mixed-use buildings offer a safe, affordable, diverse place for all ages, all incomes, and all sizes of families to live and work. The neighbourhood places create a more responsible and more social lifestyle. The public transit system makes commuting more efficient and the sustainable development programs, such as the "urban farm", provide economical and educational dimensions to the everyday life in the community.

The design is intended to create a sustainable community, one that cares about people - those who live here, as well as those who visit and come for work.

## **KEY WORDS:**

PEOPLE, LIFE, SPACE, PUBLIC AND PRIVATE, URBAN, SUSTAINABLE, CONTEXT, LIVE AND WORK, NEIGHBOURHOOD, CARING, COMMUTING

# **ACKNOWLEDGMENTS**

**Robert Kirby**

**Ken Johnson**

**Andrew MacIver**

**Bill Perks**

**Eliza Florendo**

**Silvana Costa**

**Mr. Bill**

**Matthew Roddis**

**Heather Barnsley**

**Jan Triska**

**Joanne Dorais**

**David Chase**

**Mom & Dad**

.....

**Thanks**



# CONTENTS

ABSTRACT .....	i
ACKNOWLEDGMENTS .....	ii
TABLE OF CONTENTS .....	iii

## CHAPTER 1 INTRODUCTION

1.1 ABOUT THE PROJECT .....	1
1.2 SITE CONTEXT .....	3
1.3 SITE OPPORTUNITIES AND CONSTRAINTS .....	14

## CHAPTER 2 THE DESIGN

2.1 DESIGN GOALS AND OBJECTIVES .....	19
2.2 DESIGN PRINCIPLES .....	20
2.3 CONCEPT PLAN .....	30
2.4 TYPES OF SPACE .....	40
2.5 THE HOUSING CONCEPT .....	55
2.6 SUSTAINABLE COMPONENTS .....	58

## CHAPTER 3 A DAY IN THE LIFE OF BRIDGELAND-RIVERSIDE .....

59

## CHAPTER 4 TO CONCLUDE .....

65

## APPENDIX

APPENDIX I. CALGARY TRANSPORTATION PLAN .....	67
APPENDIX II. GOALS OF THE BRIDGELAND-RIVERSIDE AREA REDEVELOPMENT PLAN .....	68
APPENDIX III. POPULATION SIZE AND AGE DISTRIBUTION .....	69
APPENDIX IV. EXISTING HOUSING STOCK .....	71
APPENDIX V. NINE PERFORMANCE CHARACTERISTICS AND PROPOSITIONS ABOUT SUSTAINABLE RESIDENTIAL DESIGN .....	72

LIST OF FIGURES .....	74
BIBLIOGRAPHY .....	78



1.

## CHAPTER 1

# INTRODUCTION

## 1.1 ABOUT THE PROJECT

On April 1st, 1997 the Bow Valley Centre (formerly the Calgary General Hospital) ceased operation after eighty-seven years of service to the City. With the exception of the adjacent Regional Laundry Facility, which will continue to operate under contract until the year 2008, all of the buildings on the site were demolished on October 4th, 1998. The site is now subject to cleanup.

This hospital site together with the adjacent Parking Lot Lands and Open Space Lands, totalling 13.61 hectares/33.64 acres, are my study area.

The Planning and Building Department of the City of Calgary, together with the Bridgeland-Riverside community, held a planning design competition on October 1998, with the aim of achieving certain key objectives set by the city and the community. This design scheme is based on "the Bow Valley Centre Redevelopment Concept Plan--

*2. The Demolishment  
of Bow Valley Centre  
(the former General  
Hospital)*

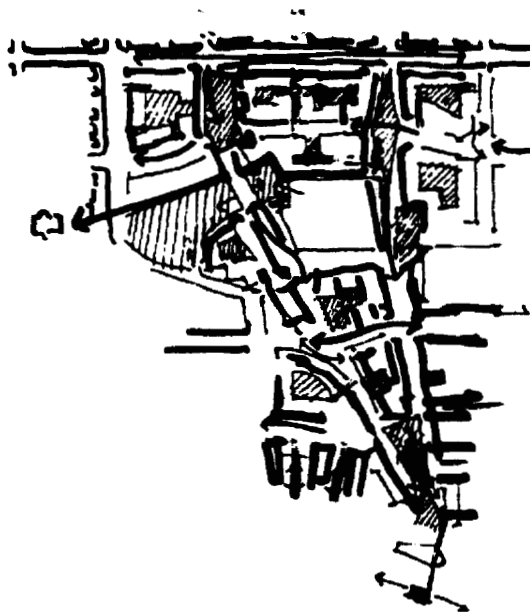


Planning Design Competition Information Package", which was organized by the city's Planning and Building Department. The design proposal contained in this MDP is not prepared for the competition, but is an experimentation and demonstration of a potential alternative design solution to revive this older inner-city neighbourhood.

### **THE CITY'S OBJECTIVES:**

The general objective of The City is to " achieve redevelopment which is supportive of the light rail transit (LRT) system, taking advantage of the site's proximity to the Bridgeland station while at the same time being sensitive to the physical, social, and economic impacts on the Bridgeland-Riverside community." (The City of Calgary, "Bow Valley Centre Redevelopment Concept Plan", 1998) This overall objective is supported by the strategic planning objectives of the Calgary Transportation Plan and the goals of the Bridgeland-Riverside Area Redevelopment Plan. (See Appendix I and II.)

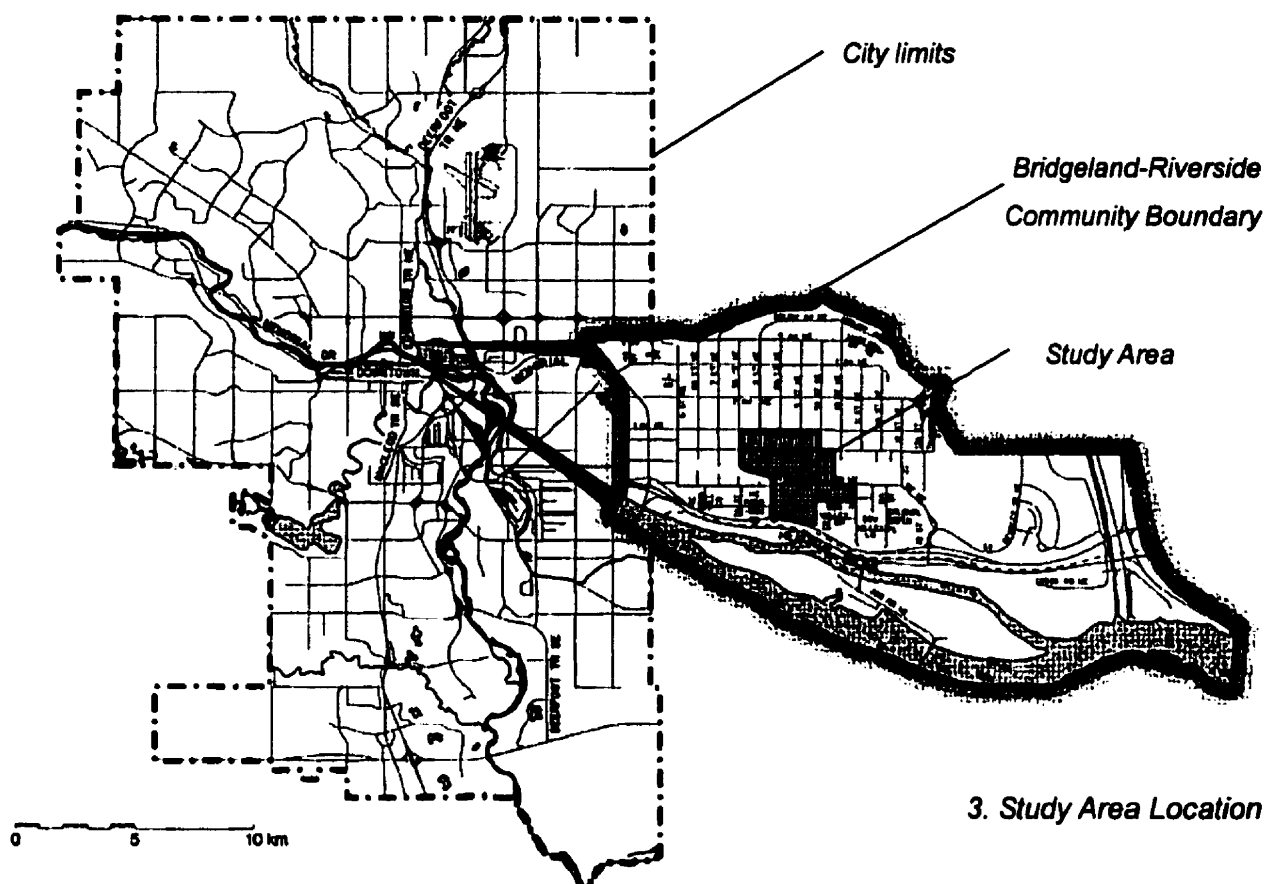
The community has also expected the development to integrate well with the community, attracting more families, supporting and enhancing local retail business.



*Design Concept Sketch*

### **DESIGN GOALS OF THE PROPOSED SCHEME:**

The design goals of this scheme are to experiment and demonstrate a sustainable development, which embraces the local traditions and urban context, and offers a safe, comfortable, convenient environment for people of all ages and all backgrounds to live, to learn, to work, and to play.



3. Study Area Location

## 1.2 SITE CONTEXT

### LOCATION:

The study area is located in the Bridgeland-Riverside area, an older inner-city community, in the northeast sector of the city of Calgary. It is in very close proximity to Downtown Calgary.



4. Airphoto 1998

The community boundaries are defined by 4th Street NE and Edmonton Trail on the west, Bridgeland Crescent and Centre Avenue on the north, Deerfoot Trail on the east and the north bank of the Bow River on the south. The study site is bounded by 1st Avenue to the north, Memorial Drive to the south, 7A Street to the west and 9A Street to the east.

Calgary is a northern winter city, with approximately 4~5 months a year of winter conditions. However, winter outdoor sports are quite popular, such as skating, hockey, etc. During sunny days, most people go out to enjoy outdoor events.

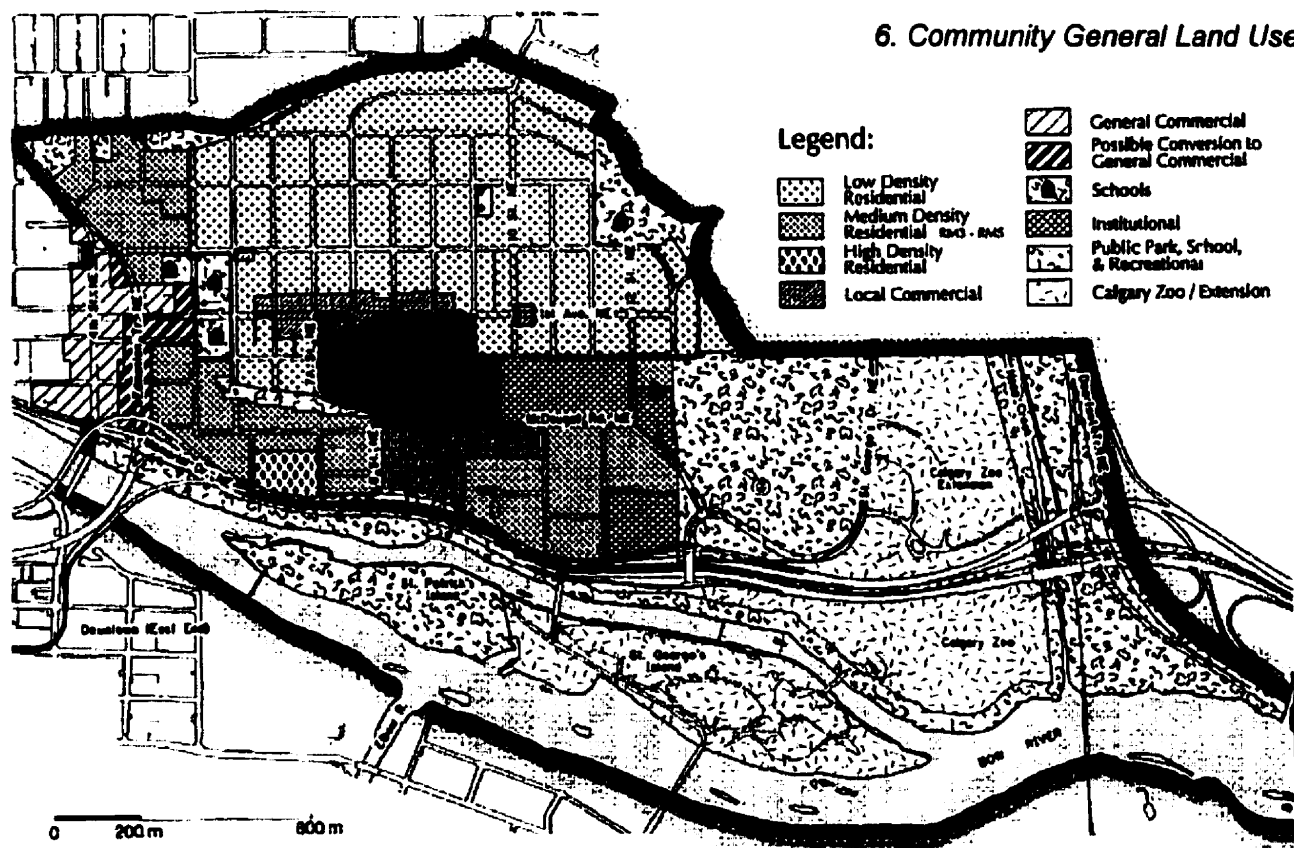


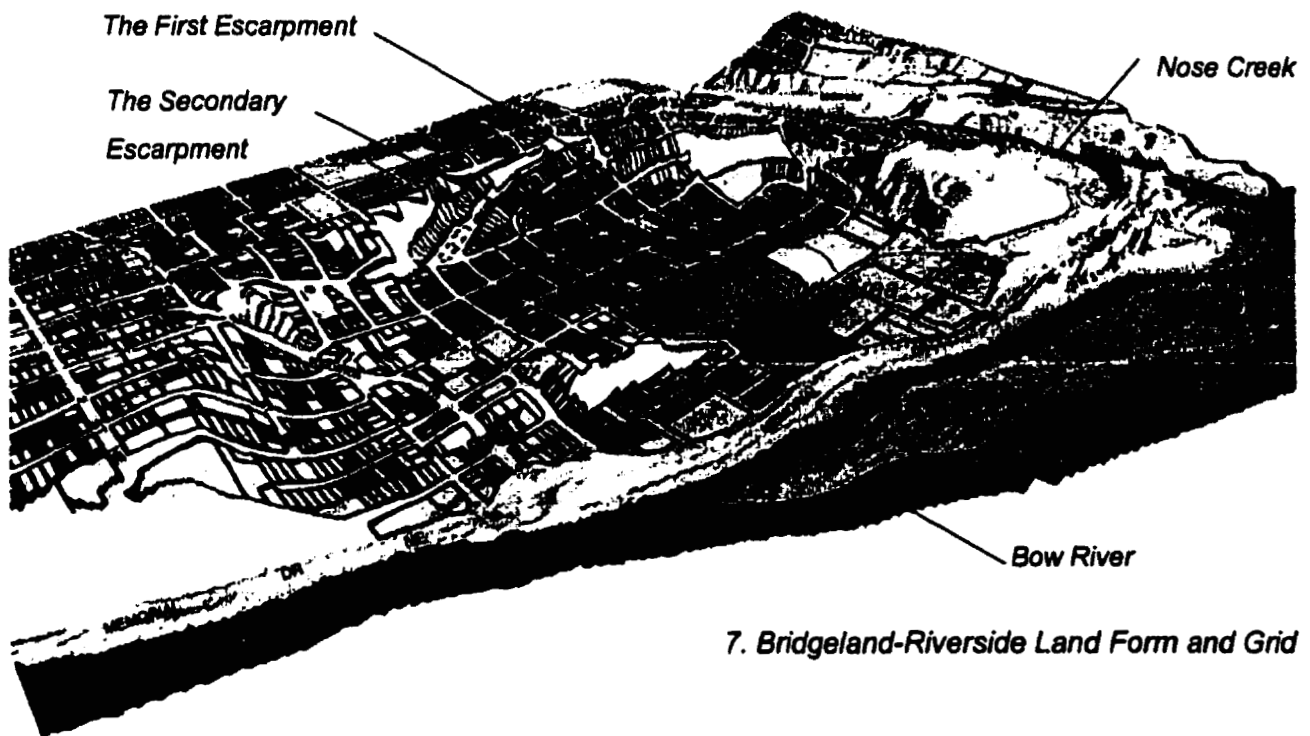
5.

## NATURAL FEATURES:

Two escarpments and two waterways shape the land.

The first escarpment, which arcs in a semicircle, starts from the river west of 3rd Street NE, north to about 6th Avenue NE and south back to the river east of 12th Street NE. This escarpment attains a maximum height of about





*7. Bridgeland-Riverside Land Form and Grid*

30 metres above the higher half of the site. A secondary escarpment of lesser extent and elevation separates the old Riverside neighbourhood (to the south) from Bridgeland (to the north), where the Bow Valley Centre Hospital used to be.

Bow River and Nose Creek are located on the south and east of the site, respectively.

## **HISTORY:**

### ***ABOUT THE COMMUNITY***

At around the turn of the last century, when the Langevin Bridge was built across the Bow River, the Bridgeland-Riverside area was developed. In 1907, the Bridgeland community joined the city; followed by the Riverside community in 1910. They represented the first structured communities in Northeast Calgary.



**8. Airphoto 1924**

The district is known to be a significant ethnically diverse neighbourhood. From its early days, this community became home to a great amount of immigrant working class families. Riverside was predominantly German, while the Bridgeland community has a distinctive Italian heritage, which can still be seen in the restaurants and shops along 1st Avenue NE.

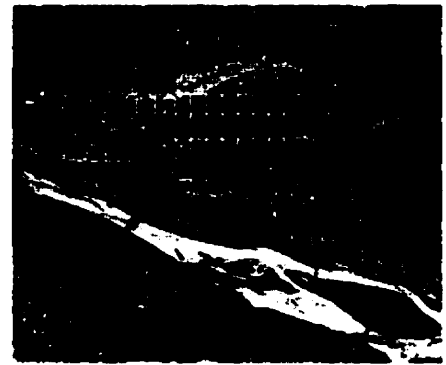
Bridgeland-Riverside grew steadily, more or less, throughout the first half of this century. But since the 1960's, with young families moving out to the newer suburbs, growth has declined noticeably.

Organizations such as the Knights of Columbus, CareWest, and The Metropolitan Calgary Foundation have developed extensive housing and special care facilities for seniors in close proximity to the Bow Valley Centre and the close-by Cross Bow Auxiliary Hospital. The population of the area has aged considerably, and the senior population will keep growing, since the Metropolitan Calgary Foundation has announced plans to construct new seniors facilities with over 1,100 units, over the next 30 years. The Cross Bow Auxiliary Hospital is being phased out of operation, but future plans for the site are currently uncertain.

The Children's Cottage, the Calgary Women's Emergency Shelter and the Calgary Catholic Immigration Society are also located in the Bridgeland- Riverside community.



9. Airphoto 1949



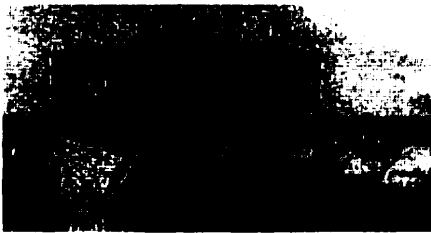
10. Airphoto 1966



11. Airphoto 1982



12. Airphoto 1991



13. The Old General Hospital in the 1920's

### ***ABOUT THE HOSPITAL***

In 1910, the General Hospital was opened on the Bow Valley Centre site. It went through several major expansions during its eighty-eight years' existence. The latest expansion occurred in 1982. The houses on the south side of the 1<sup>st</sup> Avenue NE were demolished to give room for parking lots of the hospital. The building complex was demolished in October 1998 and had, up to that time, been in existence for over 40 years.

The absence of the last inner-city hospital has a strong impact on the surrounding communities. Now, most of the hospitals are located further away from the downtown area. It is, therefore, inconvenient for the inner-city residents, especially seniors, who live in this area to get medical help since the chances of emergencies delayed in heavy traffic is increased.

### **CURRENT CONDITION:**

#### ***COMMERCIAL USES***

According to the 1992 city survey, the 1st Avenue business district contained 14 retail stores and services. They occupied an estimated 17,900 sq. ft. of retail floor space, which was highly concentrated in the area of speciality food/ groceries (40%) and Italian restaurants (25%). Most of the remaining floor space was used by drugstores (16%), convenience stores (9%) and personal services. The two three-storey medical buildings on 1st Avenue provided about 46,000 sq. ft. of office floor space.



The Bow Valley Centre closure had a significant impact on many of businesses along the 1st Avenue NE. Currently, both the medical buildings have vacant office space.

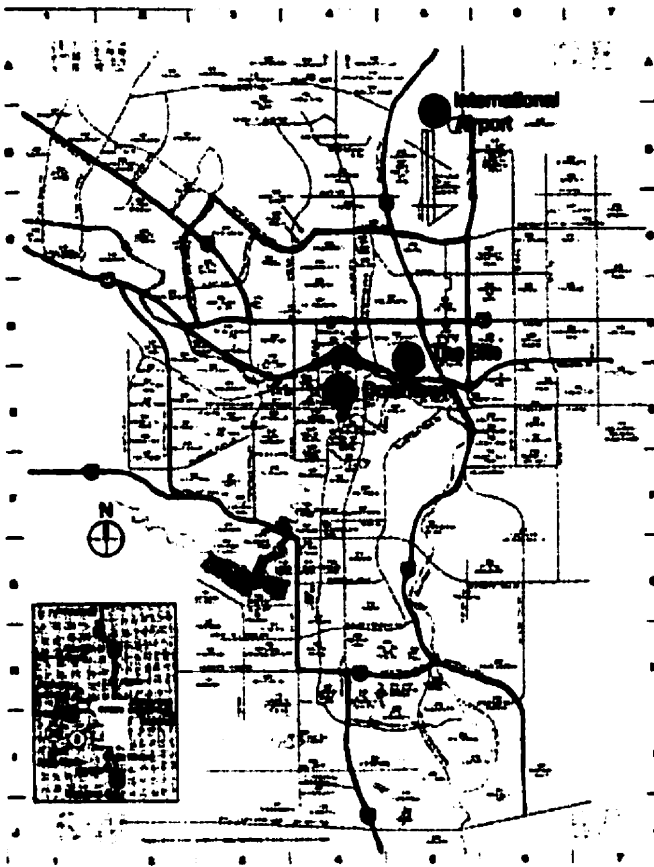
Today, most of the commercial activities occur on the north side of 1st Avenue NE. However, before 1982, there were commercial, retail, office and residential development existing on the south side (now known as the Parking Lot Lands). These lands were expropriated to accommodate hospital expansion in the same year.

The other small commercial area in the neighbourhood is the Edmonton Trail/4th Street NE commercial area, which mainly provides automobile service and furniture business. It is quite different in character and trade area from the 1st Avenue commercial street.

There are four major pedestrian-oriented commercial streets in the city. These are located on 9th Street SE, Stephen Avenue, Kensington, 4th Street SW and 17th Avenue SW. 1st Avenue NE has a great potential to revive and expand. It has similar qualities , but smaller scale, compared with the other form commercial streets mentioned above. The buildings on the street are mostly mixed-used, two-four storeys high with some lots. The width of the driveway and sidewalk is base on pedestrian easy crossing and encouraging street activities. The retail outlets and restaurants located primarily between 7th Street NE, and 9A Street NE have a strong German and Italian character. They attract many visitors, and their business goes throughout the city and beyond. Together with the commercial activities located on Edmonton Trail, they could form another pedestrian-friendly commercial district in Calgary, and enhance the city's pedestrian-oriented commercial network.







17. City's Major Roads



16. LRT Station  
Looking SW (Bow  
River is on the left  
side.)

## ROADWAYS

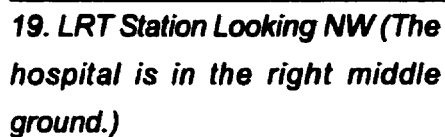
Bridgeland-Riverside has excellent access to the city's roadway network. Both 8th Street NE and 12th Street NE connect with Memorial Drive, which via Deerfoot Trail leads to the Calgary International Airport, the extensive northeast industrial/commercial district, and provincial highway network to the north, east and south.

Memorial Drive also provides access to Downtown Calgary via the Langevin Bridge, to the northwest of the city (including the University of Calgary) and to the Trans Canada Highway west to Canmore and Banff.

1st Avenue NE Serves as the primary east-west collector through the community, connecting with the Edmonton Trail/4th Street NE to the west, as well as with 10th Street NE and 12th Street NE. 10th Street NE runs north across the escarpment to the community of Renfrew and the Trans Canada Highway, while 12th Street NE connects with Memorial Drive and provides direct access to the Calgary Zoo.

The community is well served by transit. The Bridgeland Light Rail Transit (LRT) Station is located on the southern end of the site. It is the first station on the northeast LRT line outside the Downtown area. The LRT service operates at five to six minute intervals during weekday peak periods (6:00-9:00am, and 3:00-6:00pm), and every 15 minutes at all other times. The northeast line runs from the Downtown, where free transfers can be made to the south, northwest line, to the Whitehorn Station in Northeast Calgary. It provides ease of access to most of the city's attractions and commercial/light industrial area, as well as to the northeast residential sector.

**The site is also served by bus route No. 9, which utilizes low floor buses to facilitate access by seniors. It stops at the Bridgeland LRT Station, senior's housing area, 1st Avenue NE, and provides links to Downtown, Kensington, the University and the Varsity Mall.**



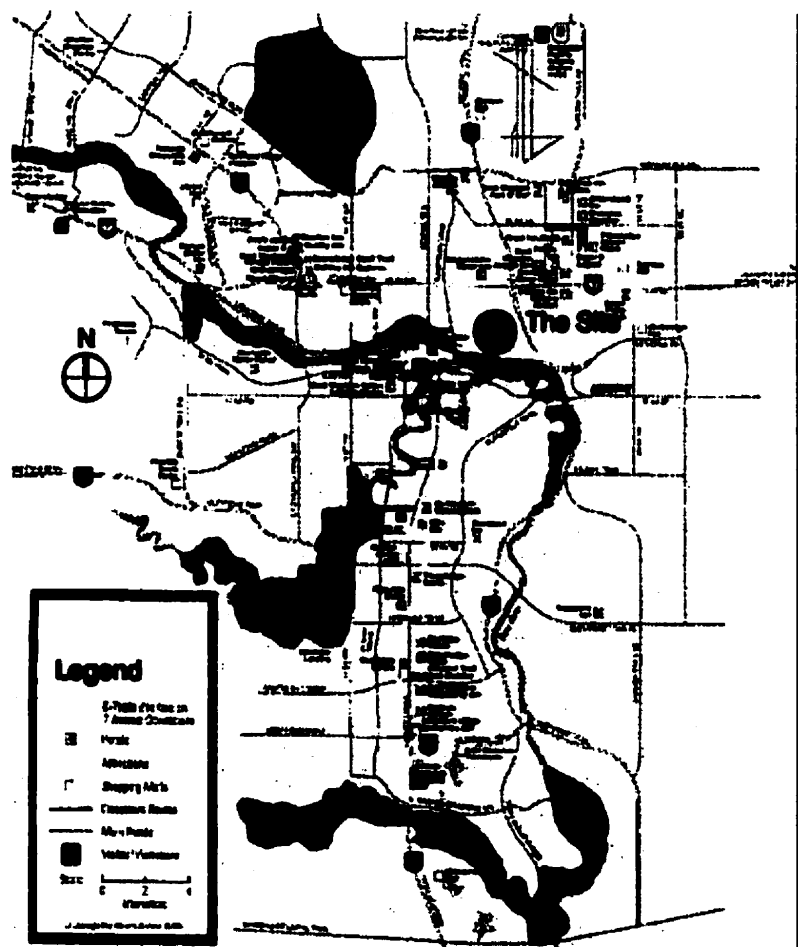
## **PATHWAYS AND OPEN SPACES**

The City of Calgary has one of the finest pathway systems in North America, with more than 210 km of paved paths extending throughout the city. The pathway system links many of the city's parks and natural areas, as it winds along the Bow and Elbow river valleys. It attracts walkers, joggers, cyclists and in-line skaters of all ages throughout the year. Access from the Bridgeland-Riverside area to the city pathway system, is gained by crossing the LRT bridge over Memorial Drive.

The primary local open space is currently located on the lower plain of the secondary escarpment, between McDougall Road NE and Memorial Drive NE. It includes the community centre site, adjacent parks and playgrounds (the area is about 4.32 hectares/10.7 acres). It contains the community building, an outdoor swimming pool, a small senior's park, three baseball diamonds, several play fields, and a number of pathways providing access between the Bow Valley Centre site and the Bridgeland LRT Station. Some of these facilities, especially the baseball diamonds, serve regional users.

Other open space features within Bridgeland-Riverside are located in the residential area on the higher plain, including two tot lots, two decorative parks, and five school sites.

The lower plain playgrounds are highly used on holidays and weekends. Since this open space is relatively big, and remote from the residences, it is also used during the nights by homeless people.





21.



22.

### ***DEMOGRAPHIC PROFILE***

Benefitting from the booming economy, Calgary attracts many people from all over the country seeking job opportunities. The population of the city is increasing. However, in many inner-city communities the population is either stable or in decline. According to the Planning and Building Department at the City of Calgary, the population of Bridgeland-Riverside Community has declined steadily from 5,100 in 1980 to below 4,700 in 1985, but appears to have stabilized since then at around 4,500. (See Appendix III -- Population Size 1980--1997)

At the same time, Bridgeland-Riverside has one of the highest concentrations of senior citizens of any community in Calgary. It also has relatively higher proportions of unemployment, lower education, and lower income populations. (See Appendix III -- Age Distribution 1986 and 1996 Comparison, and Socio-Economic Profile)

### ***Housing Stock***

The majority of housing units in the neighbourhood were built prior to 1960, with about one third having been constructed before 1946. Most of the newer developments are seniors' housing complexes, apartment buildings and infill redevelopment. Bridgeland-Riverside has more apartments and fewer single-family homes than the city average. Furthermore, it has fewer dwellings owned by the residents, as compared to other parts of the city. (See Appendix IV -- Existing Housing Stock)

## 1.3 SITE OPPORTUNITIES AND CONSTRAINTS:



*23. Murdock RD. looking SW  
(Downtown in the middle ground)*

The study area comprises three distinct sites. The central site, extending from McDougall Road on the south, to Murdock Road on the north, encompasses the Hospital Lands. All of the former Bow Valley Cen-

tre hospital buildings were located in this area. The northern site, extending from Murdock Road north to 1st Avenue NE, contains the former hospital Parking Lot Lands. The third site extends south from McDougall Road to Memorial Drive and the Metropolitan Calgary Foundation Lands, known as the Open Space Lands. The total study area is about 13.61 hectares/ 33.64 acres.

### **SITE CONDITIONS:**

#### **A. GEOGRAPHIC CHANGES**

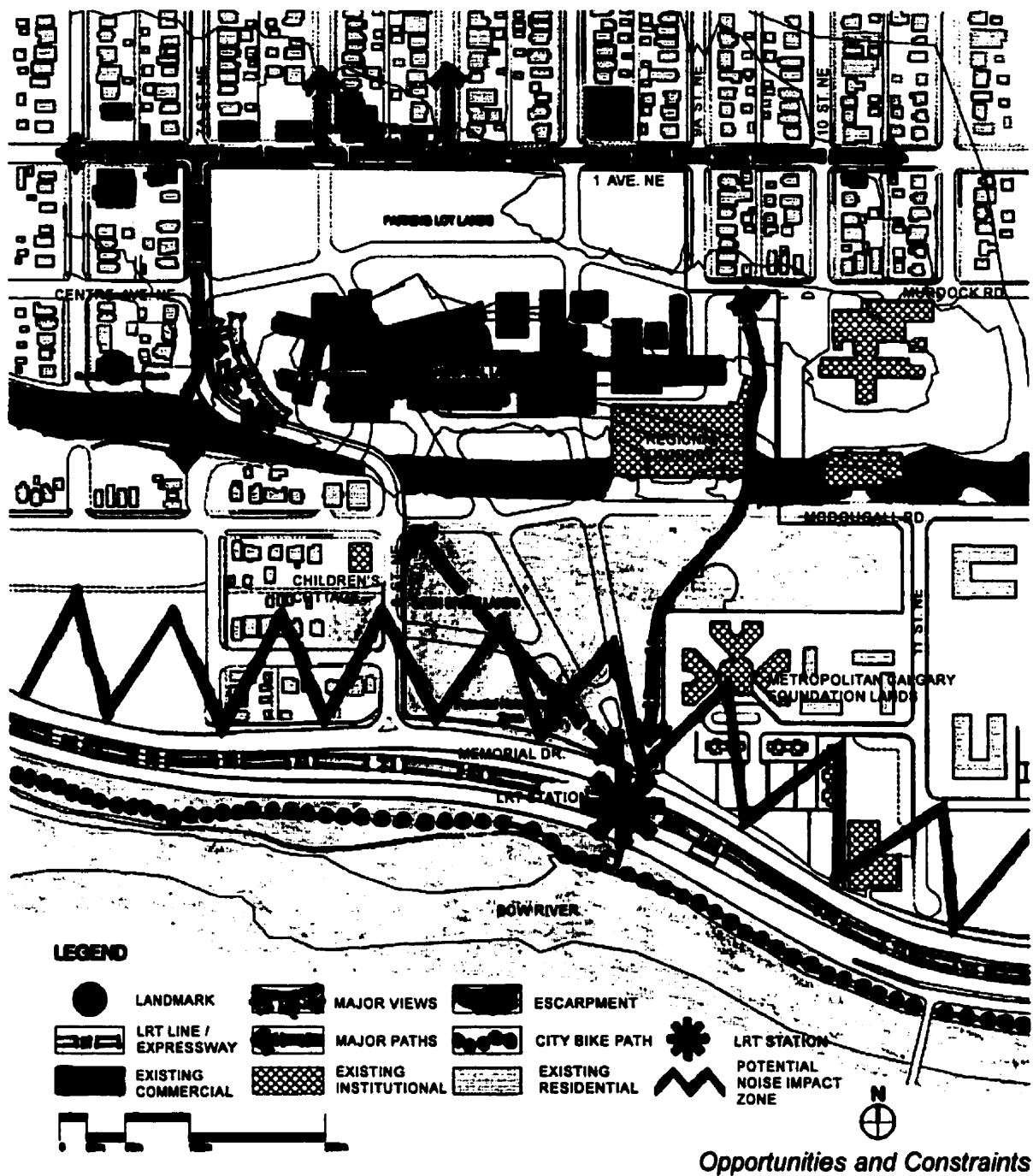
The main geographic feature of the site is an average five-metre escarpment that runs east west on the north side of McDougall Road. The area to the south of the escarpment is lower and relatively. The grading on the north side of this escarpment has been changed due to the demolition of the hospital buildings, creating two levels. The Parking Lot Lands are on the higher level and slope very slightly to the north and east. The Hospital Lands are on the secondary level, and slope to the south and east.

#### **B. ROADWAY AND NOISE:**

Memorial Drive NE is located on the south side of the study area. The potential noise of the traffic may impact a portion of the Open Space Lands.

#### **C. WINTER CONDITIONS:**

Winter is relatively long in Calgary. It is, therefore, necessary to create some "warm spots" or enclosed walkways and to shorten the outdoor walking distance between them. Providing protected south-facing open space is another way to create warmer microclimates for residents and visitors, to support winter outdoor sports and events, and to make the city more enjoyable.



#### D. Loss of the Hospital:

Since the closure of the hospital, Bridgeland-Riverside community has been facing the decline of the medical based business. The seniors, who live in the neighbourhood, have lost the advantage of close proximity to a hospital. The inner-city communities need a closer healthcare facility to take care of their emergency and everyday medical needs.



#### **OTHER OPPORTUNITIES:**

The site has excellent access to both the city's road-way network and the public transit system. The LRT provides an efficient way to get around the city. The LRT bridge connects the site to the city's pathway system.

Both Parking Lot Lands and Hospital Lands have spectacular views of the Downtown. The adjacent landmark buildings, such as the Italian Centre, old Fire Hall #4, St. Matthew's Lutheran Church, City Bakery, and Ukrainian Catholic Church of Assumption, express the richness of the heritage and multicultural background, making the site potentially one of the major attractions of the city.

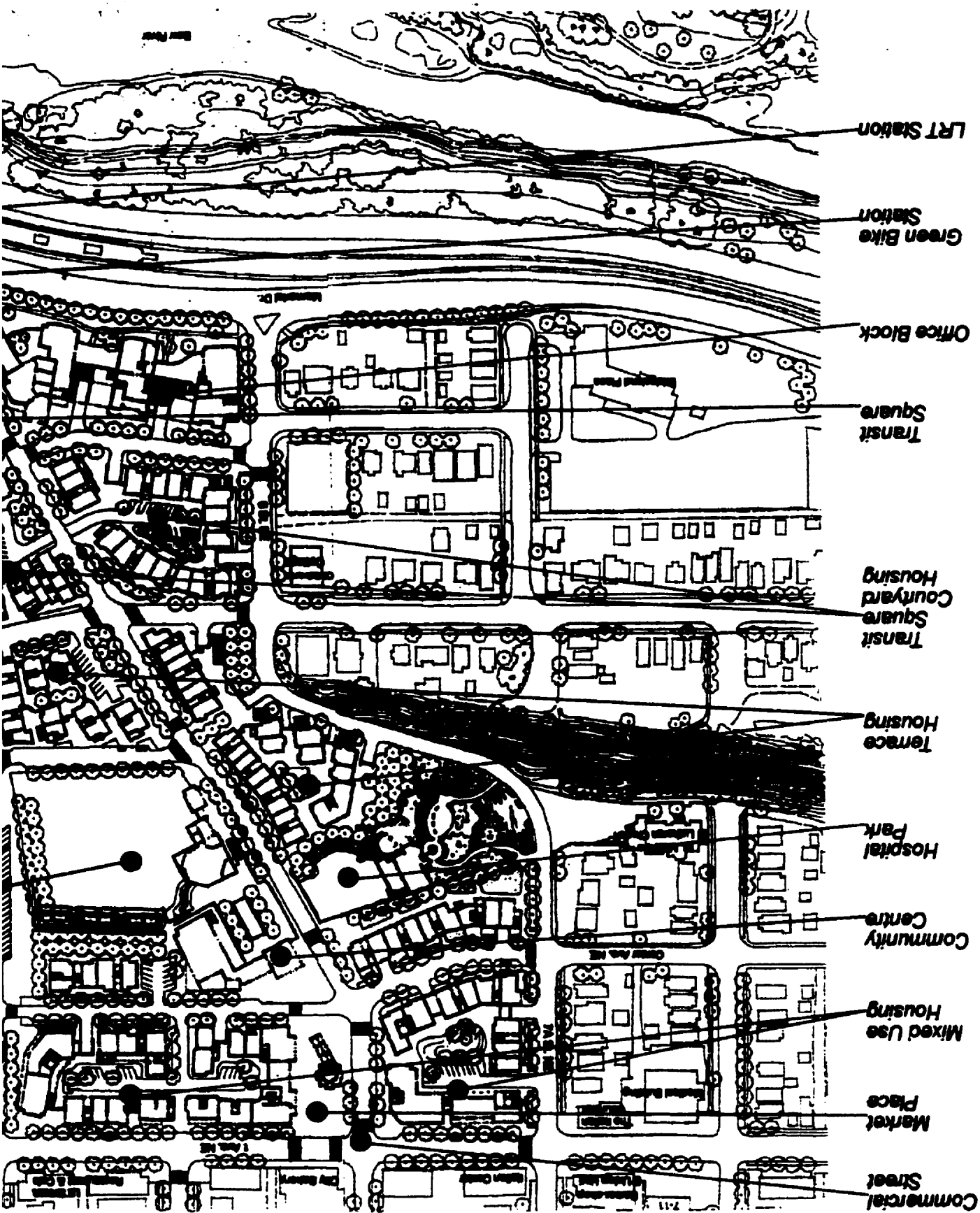
Retail outlets and restaurants on 1st Avenue have a strong potential to become another pedestrian-oriented commercial centre of the city. The mix of population with different ages, family sizes, incomes and occupations, as well as mixed-uses of the area, offers a great opportunity for developing a sustainable community in this area.



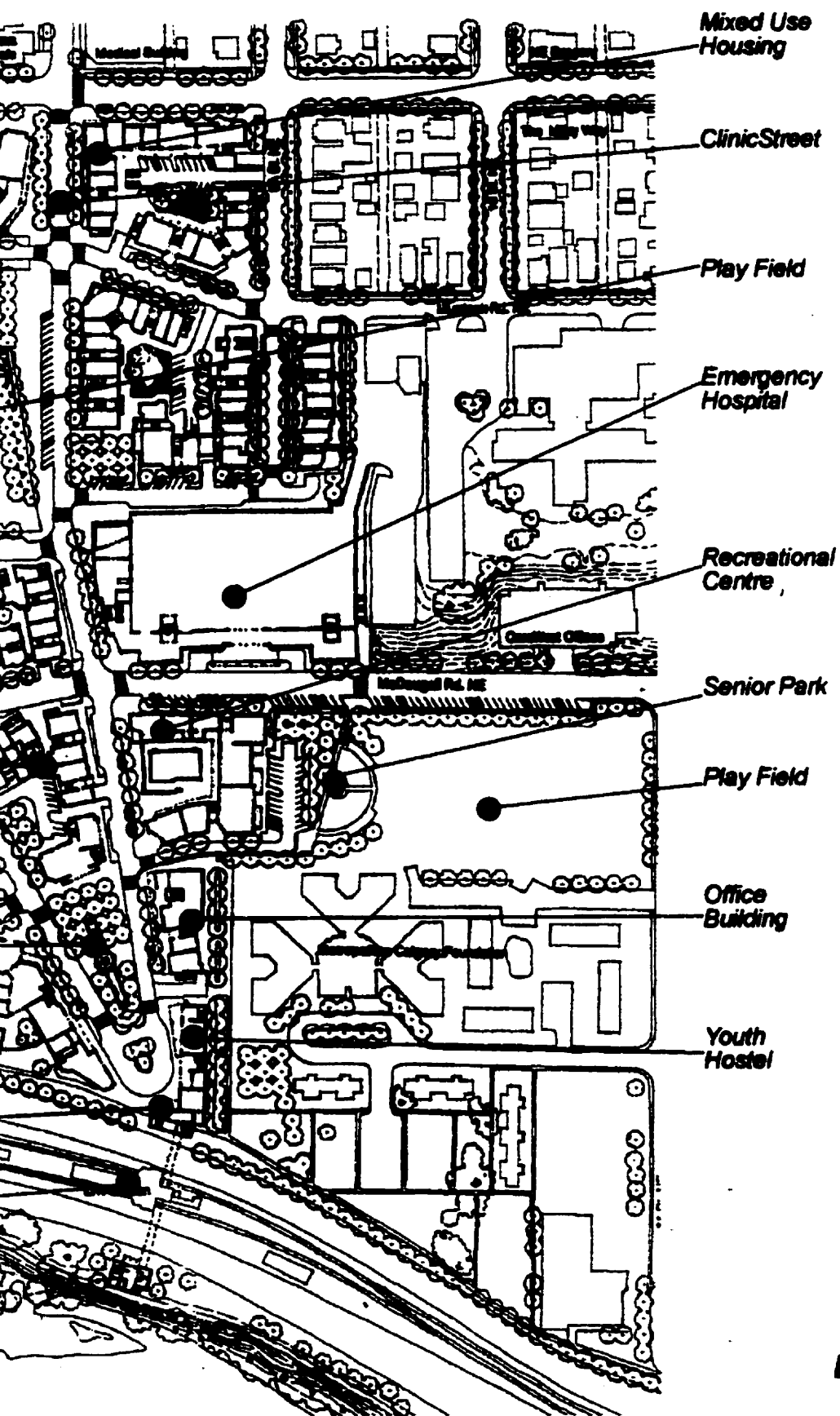
*24. Parking Lot Lands Looking SW  
(Downtown in the middle ground)*

*25. The Hospital Building under  
Demolishment*









**Design Concept Plan**



## **NOTE TO USERS**

**Page(s) not included in the original manuscript are unavailable from the author or university. The manuscript was microfilmed as received.**

**17 - 18**

**This reproduction is the best copy available**

**UMI**

## **CHAPTER 2**

### **THE DESIGN**

#### **2.1 DESIGN GOALS AND OBJECTIVES**

##### **DESIGN GOALS:**

One of the major goals of this design is to create a safe and accessible centre in the urban environment, to make a dynamic and diverse place for people to live, work, learn and play. This neighbourhood embraces the rich cultures and histories of different ethnic groups. It has a clear identity as a human place, encouraging people to communicate and to help each other. It is well connected to the city's circulation networks. It also cares about future generations in terms of providing a richer and healthier environment.

##### **CONCEPT:**

The design scheme is created around an urban centre, which is a lively place for people, in the Bridgeland-Riverside community. It provides housing choices, welcomes people in different age groups, different backgrounds and different family size to live together. It attracts jobs, encouraging people in other communities to work here; supports the live and work life style; supports transit; offers a convenient road system with less interference for residents; provides strategic parking; integrates existing commercial and medical based businesses; provides a

quality public environment; and attracts visitors. It also promotes a sustainable development program, combines sustainable education, practice and demonstration. (See Appendix V – Nine Performance characteristics and Propositions about Sustainable Residential Community Design)

In short, this community is a model of a sustainable urban neighbourhood and will influence other communities through this commitment to sustainable development practices.

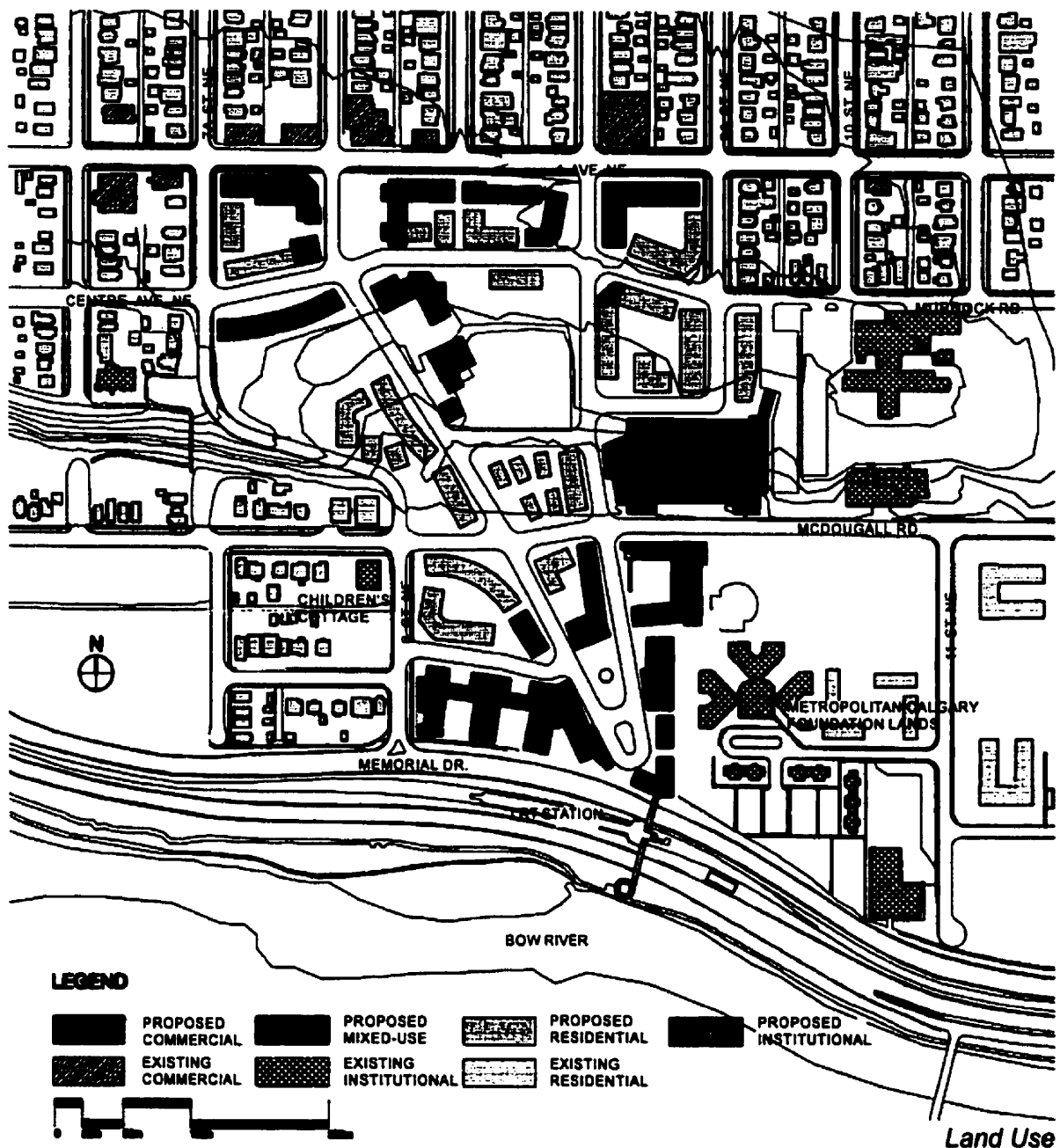
## **2.2 DESIGN PRINCIPLES**

### **DEVELOPMENT PROGRAMME:**

This plan offers a set of strategies to integrate existing development and dominant features of the community.

First, along the south side of the 1st Avenue NE Commercial Street, the mixed-use buildings are developed in a complementary manner, to create a pedestrian-friendly street, which is an inspiration of the spatial qualities of European cities. The Market Place is located on the street as a gateway. It enriches visual experiences, creates another dimension to 1st Avenue NE, and links it to the centre of the site. The Market Place, Community Centre, Hospital Park and Play Field form the Civic Centre, which is the heart of the community. The Market Place can be used for open market and special community cultural events. Another main entry to the new development is beside the existing medical offices building. There are clinics and





medical based businesses occupying the ground level of the mixed-use buildings along the street. They cater to those with common illnesses, such as allergies and colds, as well as other needs. With the proposed Emergency Hospital, which will deal with major illnesses, this street will be identified as a new concept of "hospital", more adaptive to the market. The layout of the major roads is based on the pattern of the former pathways in Bridgeland-Riverside. They are the shortcuts from the LRT station to 1st Avenue NE. There are office buildings, residential and commercial mixed-use buildings

and a hostel around the Transit Square, which is a centre for public transportation and related services. It is a window to the new neighbourhood. A bicycle service centre is also located here, since it is a connecting point of the local and the city pathway system.

The neighbourhood offers a diversity of housing types and layouts for a diversity of residents. The housing units are flexible and adaptable. They are designed to accommodate different ways of life, family sizes and age groups. Most of the houses face the street and form courtyard patterns. Every housing group has its own identity. They are of different sizes, shapes, and relationships with the ground. A neighbourhood place is located in each building group. It is a common area shared by residents.

The office buildings are located beside the LRT station, and giving access to Memorial Drive. There are coffee shops, restaurants, convenience stores and a day care in the building. The Transit Square will be a lively place for employees to relax at lunch hour. The form of the office building is in response to minimizing noise, maximizing views to the Bow River Valley and to the high-rise buildings in Downtown Calgary, and enrich the views from Memorial Drive into the site.

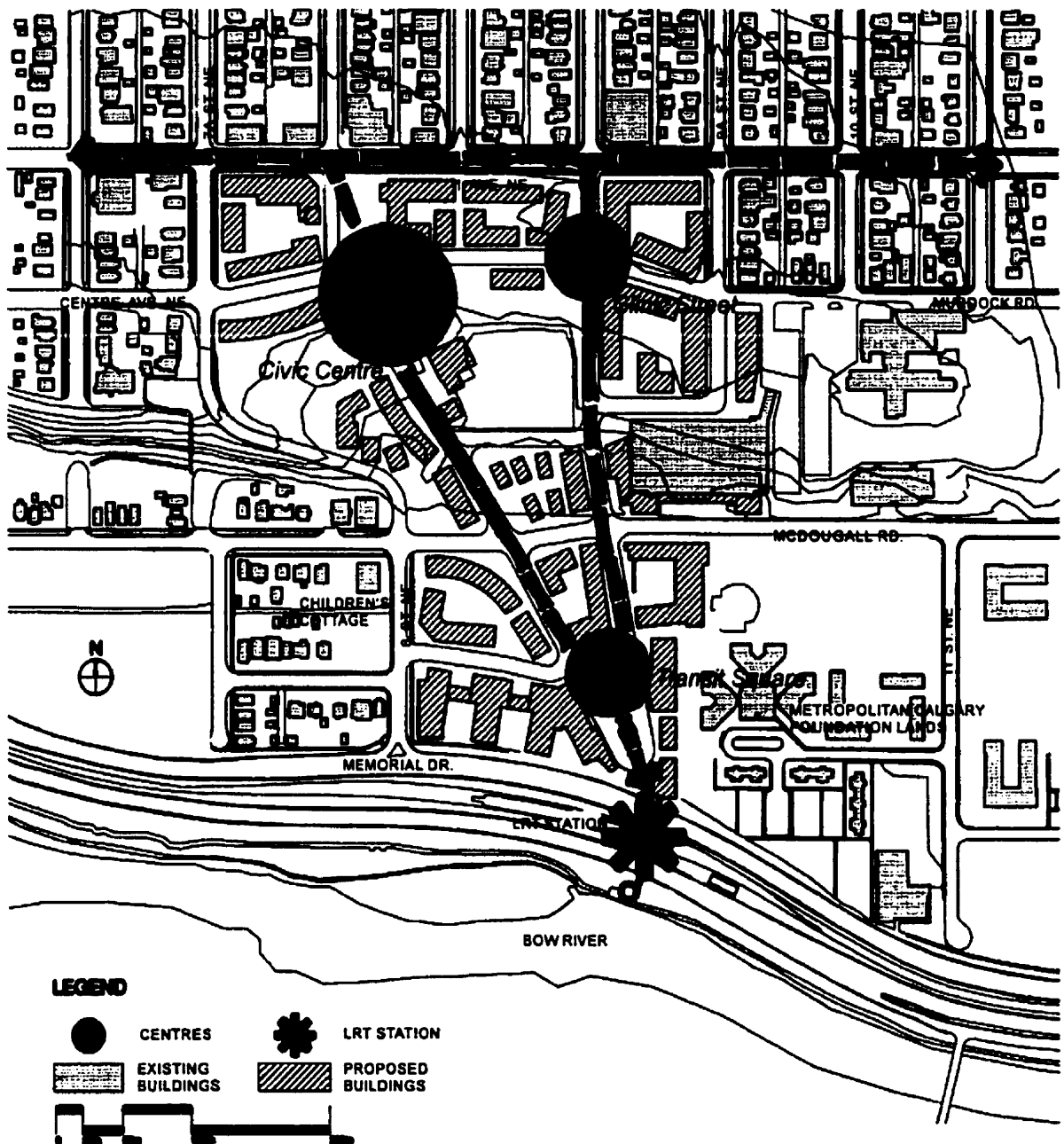
The playground has been relocated closer to the schools and residences. It is turned into a series of open spaces, which can have different functions or be used as a whole for special events. The Senior Park has been preserved, and the outdoor swimming pool has been integrated into a recreational complex. A hostel stands beside the LRT station, offering short-term accommodation for visitors.

### **THREE MAJOR CENTRES:**

The plan is organized around three centres. They all have their own identities, but at the same time, they are linked to and depend on one another to form an outstanding attraction in the North-east Sector of Calgary.

#### **A. CIVIC CENTRE**

The Civic Centre is the heart of the community. It includes the Market Place, the Community Centre, the Hospital Park and a play field. It offers a range of residential, commercial and educa-



*Three Major Centres*

tional services to the local community and to the city as a whole.

# 1. **MARKET PLACE**

The Market Place is a focus point on 1st Avenue NE, which connects with Edmonton Trail NE and forms another major pedestrian-oriented commercial district in the city. It is one of the gateways to the new development, and it is used as an open market place. Since it is the front square of the Commu-

nity Hall, it is also used for community civic events.

## **2. COMMUNITY CENTRE**

The Community Centre includes a building complex and a half-enclosed courtyard. After the demolition of the hospital buildings, the former hospital site is now approximately three to four metres lower than the Parking Lots Lands. The design of the new buildings takes advantage of the site's new topography, arranging entrances on different levels. The courtyard is located on the lower level and faces south. A major road, which starts from the Market Place on 1st Avenue NE and ends at the LRT station, bridges over the connection between the courtyard and the Hospital Park. The Community Centre is a place to hold community meetings, seminars, exhibitions, and workshops, it provides demonstrational and educational programs for sustainable developments, and offers a day care program.

## **3. HOSPITAL PARK**

The Bow Valley Centre (former Calgary General Hospital) existed on the site for about eighty-eight years. It shaped the whole community, and still has a special impact on the residents. The Hospital Park is a memorial of the former hospital. In the park, a coffee shop/gallery (which exhibits the historic photos and art works about the inner-city hospital), a rainwater storage pond and an amphitheatre are located here. A path leads to the Escarpment Park, St. Matthew's Lutheran Church, and the city

pathway. The park brings nature into the urban site. The lower courtyard of the Community Centre and the joined Hospital Park are quiet places for people to relax, and enjoy the spectacular view of Downtown Calgary.

#### **4. PLAY FIELD**

The new location of the play field is closer to the residences and the schools and is surrounded by medium density housing. The viewing area is built on the south-facing slope, adjacent to a ground used for large-scale community festivals.

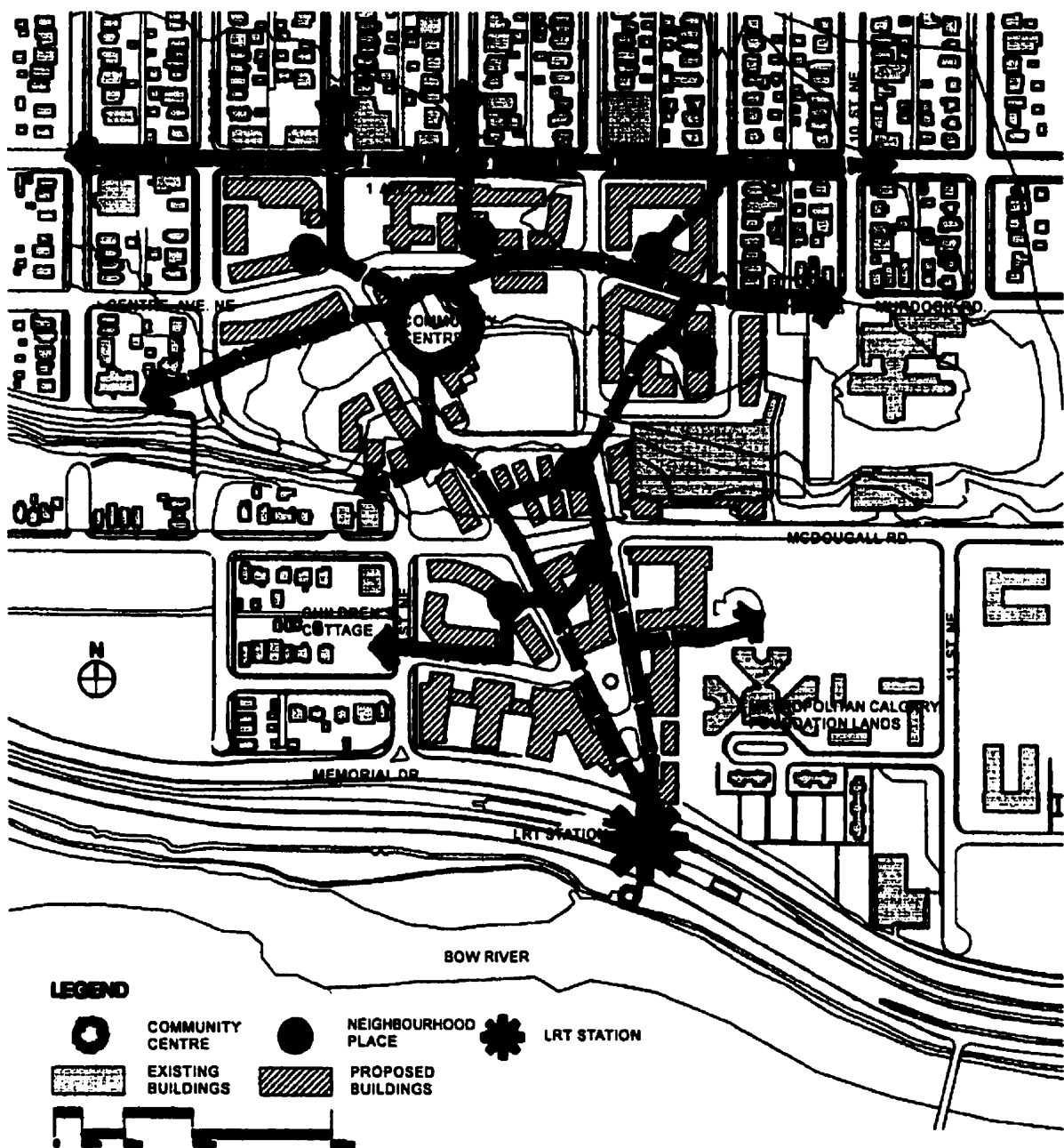
#### **B. CLINIC STREET**

The closure of the Bow Valley Centre, which was the last inner-city hospital in Calgary, has had a strong impact on the local medical-based businesses and the residents living in the surrounding communities. There is a strong demand for on hand medical services.

The Clinic Street starts from an existing medical office building on 1<sup>st</sup> Avenue NE and leads south to the Emergency Hospital, which would be converted from the former laundry building. A series of clinics and medical offices occupy the ground level of the mixed-use buildings which line both sides of the street. Clinic Street is an alternative from the traditional centralized hospital. The clinics look after common illnesses. The Emergency Hospital takes care of major illnesses, emergency services and offers short-term accommodation. A special organization would be formed to manage the relationships between clinics and the Emergency Hospital. Clinic Street is a more market-oriented medical services network than the traditional hospital.

#### **C. TRANSIT SQUARE**

Transit Square provides an interchange for the public transit (LRT and city buses), serves as a major gateway to the site, and has a high profile for business offices, "live and work" style housing and apartments. It is located beside the city's major express way, which links to the Calgary International Airport, the provincial parks and national parks. The youth hostel on the site offers short-term accommodation for tourists. Retail outlets, restaurants, day care, a recreational centre and parks surround the square. They offer services not only for the people who live and work here, but also for the visitors. The Transit Square connects to the city pathway system through the LRT bridge. The "Green Bike Station" close-by offers bicycle rental, selling, repairing, and storage services.



*Neighbourhood Places*

## NEIGHBOURHOOD PLACES

A neighbourhood place is located in every residential building group. It is a common site for local residents. It is attached to the housing and offers common facilities, and includes a dining hall for group meals and special



26.

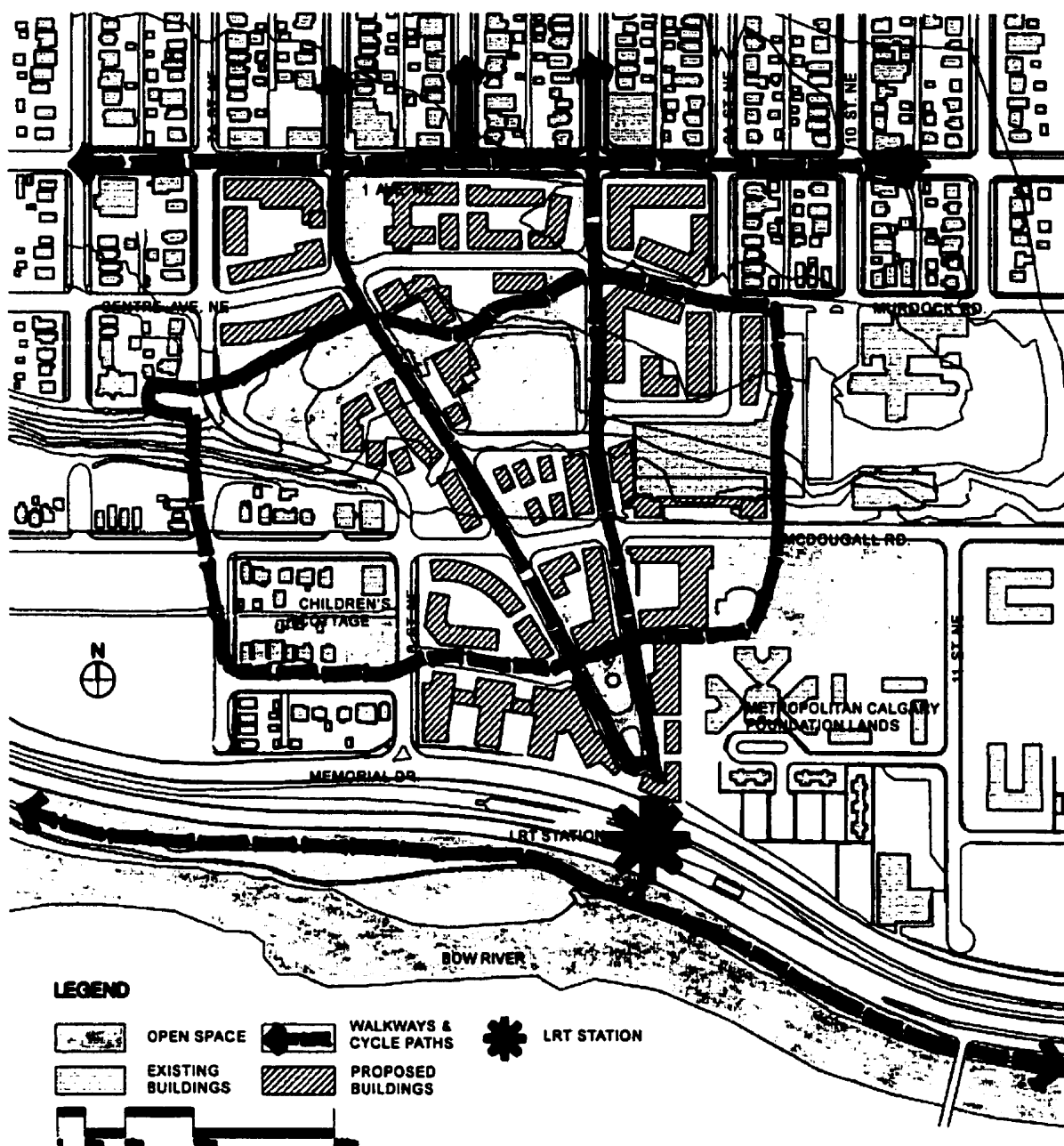
occasions, a children's playroom, a laundry room, and guest rooms. The storage rooms, workshops and a green house are not necessarily to be located in the same common house; they also can be situated in other close-by locations.

The purpose of the neighbourhood place is to offer a site for neighbours to meet, help one another and share common facilities, to create trust and friendship between residents. It is also a site to practice sustainable development programs, such as waste management, car-pooling, group heating, ground water restoration and conservation, grey water re-treatment, and urban food production. A local pathway network links all the neighbourhood places and extends itself to the city system.

A residents organization would be set up to manage and finance these common facilities and activities.

## **PATHS AND OPEN SPACE**

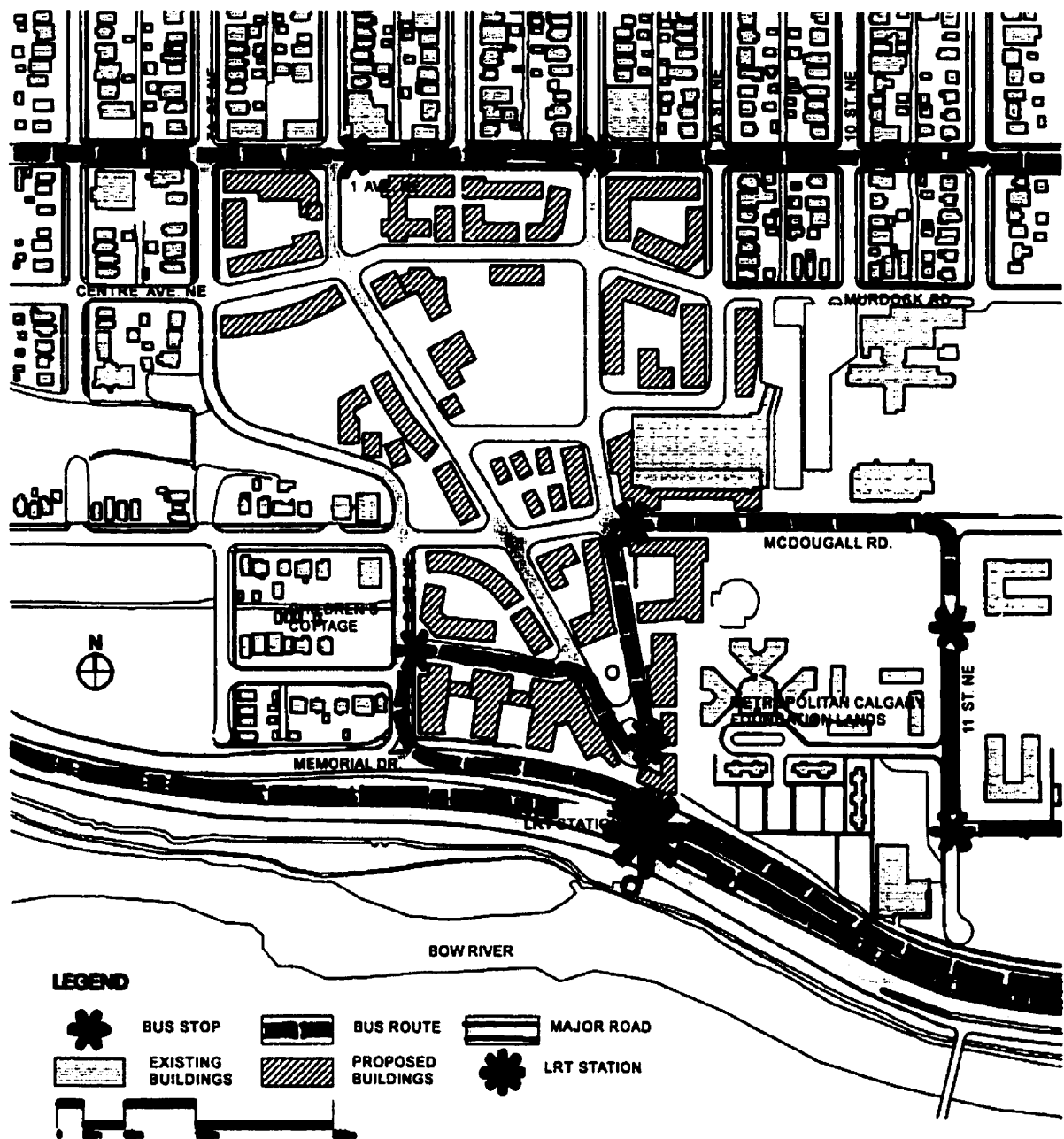
The site is organized to promote walking and cycling. A clear pathway network links transit stops, public spaces, residences, and the city pathway system together. Open spaces are arranged along the pathway. Most of them are south facing to create a desirable microclimate on the paths. They offer different levels of public and private character. Some are courtyards of neighbourhoods, some are parks and play fields of the community, and some are open markets on the commercial street. Their sizes and shapes



*Paths and Open Space*

are varied to create rich spatial experiences. There are cafes, restaurants, galleries and stores along the paths, providing a series of warm-spots for the users. The bike stations are the other major public features on the site. They are located on the major centres and close to the transit stops. Their services cover bike rental, repairing, selling, and storage.





*Roads and Transit*

## ROADS AND TRANSIT

The major roads on the site provide a simple understandable system linking all new local roads into a clear and coherent order. With control of the width and turning radii of the roads, as well as the number of intersections, the through-traffic will be slowed down and the visual experiences will be enriched.

The LRT and the city bus system provide an ease of access to all major spots of the site, and link

them to the whole city.

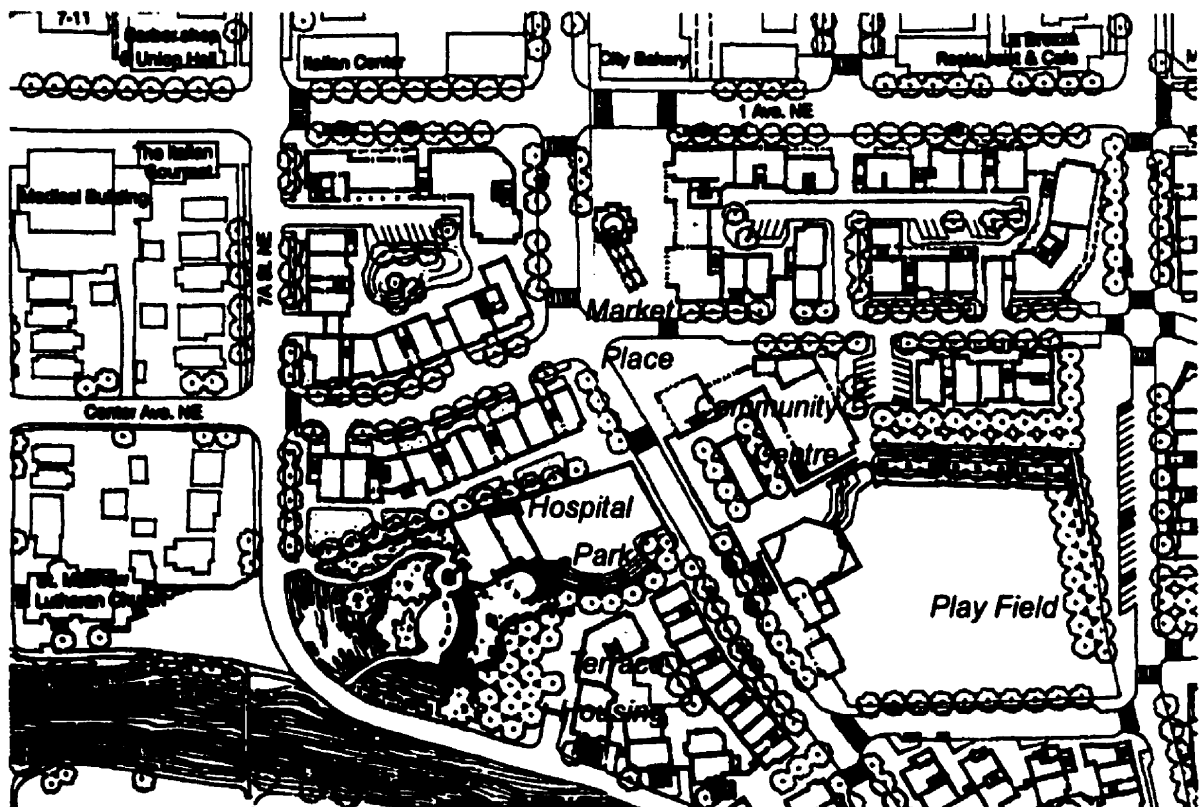
## 2.3 CONCEPT PLAN

The concept plan was developed from the analysis of the site context, opportunities and constraints. It is comprehensive because it synthesizes different aspects of the design principles. It offers a framework for future development. The various component areas of the concept plan are described here, followed by a statistical breakdown of the proposed development.

### CIVIC CENTRE

It is composed of four parts:

- \* **MARKET PLACE**
- \* **COMMUNITY CENTRE**
- \* **HOSPITAL PARK**
- \* **PLAY FIELD**



*Partial of the Concept Plan*

They are multifunctional parts. Each part functions differently, but are also linked for serving large events.

### ***MARKET PLACE***

Market Place is an extension of the 1 Ave. NE. Commercial Street, a place for all-season open markets and community outdoor civic events. To the north side, there is the City Bakery, one of the landmarks of the community. To the southeast, the Community Centre. To the southwest, Market Place opens to Hospital Park and provides a spectacular view of the city's skyline. Commercial/residential mixed-use buildings line its east and west sides.

### ***COMMUNITY CENTRE***

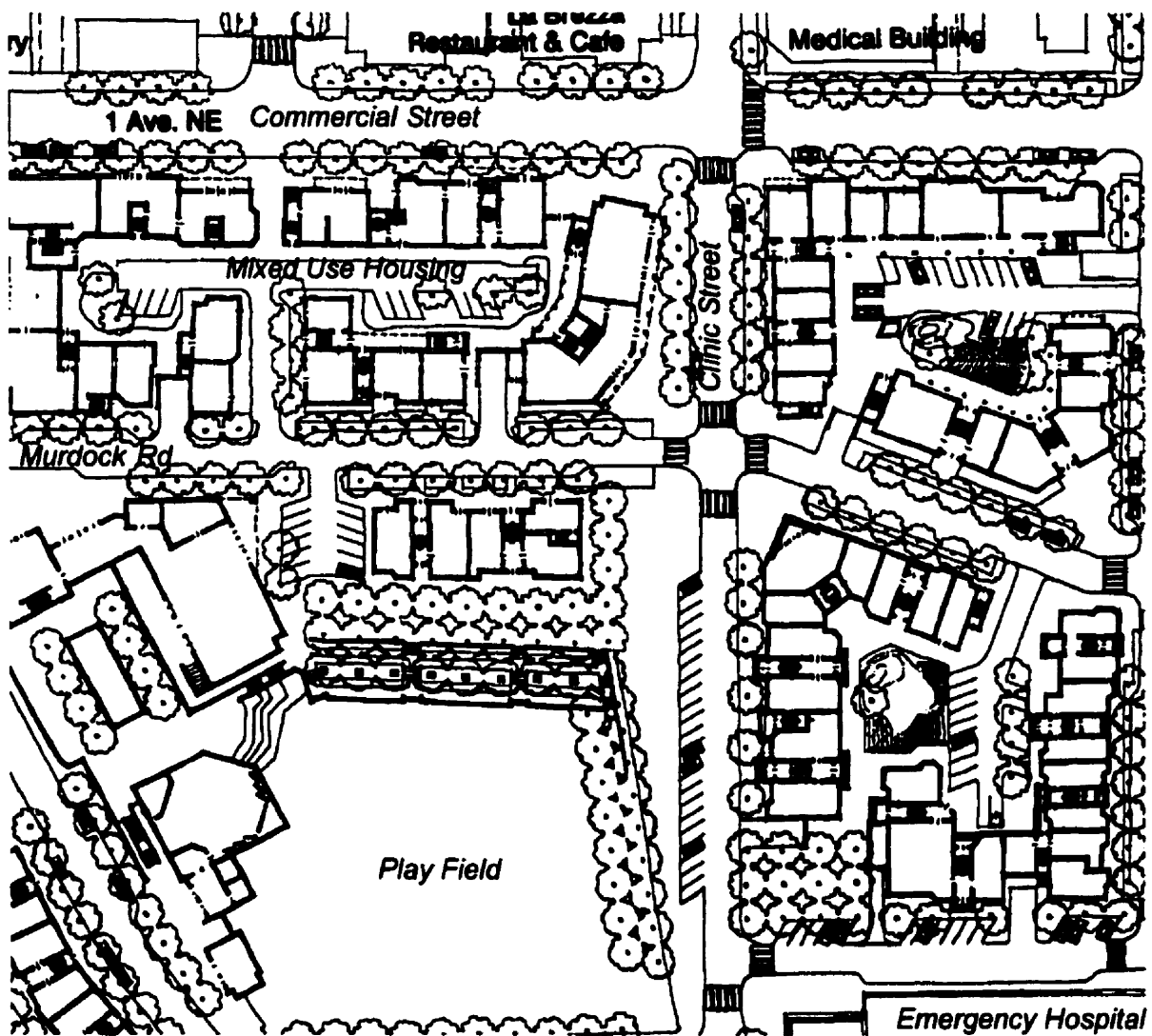
The Community Centre is the heart of the community civic life. It is an educational centre and showcase for sustainable development programs, such as waste management, grey water recycling programs, etc. It is a service centre, offering day-care, a meeting place, community library, bicycle storage, offices, cafes and other basic services. It is also an urban food production centre and recycle centre. With establishing the "urban farm" association, the community centre not only produces food, but also processes and markets it.

### ***HOSPITAL PARK***

Hospital Park is built on the site of the former Bow Valley Centre site. It is a memorial of the eighty-eight years existence of the former hospital. Taking advantage of the new topography created by the explosion, a rainwater storage pond and an amphitheatre are located on the lower part of the park. It is a multifunctional place for neighbourhoods' civic life with a coffee shop, which contains artworks tracing the history of the hospital, situated beside a pond. In the background is the beautiful downtown skyline. The path leads to the Escarpment Park and the St. Matthew Church, another landmark of the area.

### ***PLAY FIELD***

A play field is located on the higher level of the escarpment, surrounded by residential buildings. It is also close to schools, and built on the south side of the slope, following the landform and facing the sun. It is mainly used for family outdoor events, and sports games.



*Partial of the Concept Plan*

## **CLINIC STREET**

- \* Includes the integration of the existing medical offices and in-filling clinics, helps the declining medical based businesses to rebuild themselves into a more flexible and more market-oriented system.
- \* Together with the proposed Emergency Hospital, serves the health care needs of inner city residents.
- \* Close to the existing seniors housing and special care facilities. Allows most inner-city people to get help quickly and conveniently.



**27. Path in Senior Park**



**28. Existing Laundry Building**



**29. 1st Ave. NE (City Bakery is on the left)**

### **EMERGENCY HOSPITAL**

- \* Its operation is coordinated with the clinics on the Clinic Street, serves inner-city residents.
- \* Converted from the former laundry building.
- \* Two new entrances for vehicular and pedestrian access.
- \* Roof parking and street parking.
- \* Roof gardens.

### **1 AVE. NE COMMERCIAL STREET**

- \* Restoration of the existing commercial buildings, emphasis on the Italian & German character.
- \* Infill retail outlets and offices. Create local job opportunities.
- \* Introduce "live and work" life style. In mixed use buildings, the upper floors are used for housing, and the street level is used for commercial purposes.
- \* Coordinate with dominant existing commercial building styles, materials and details. Organize public space. Encourage street activities.

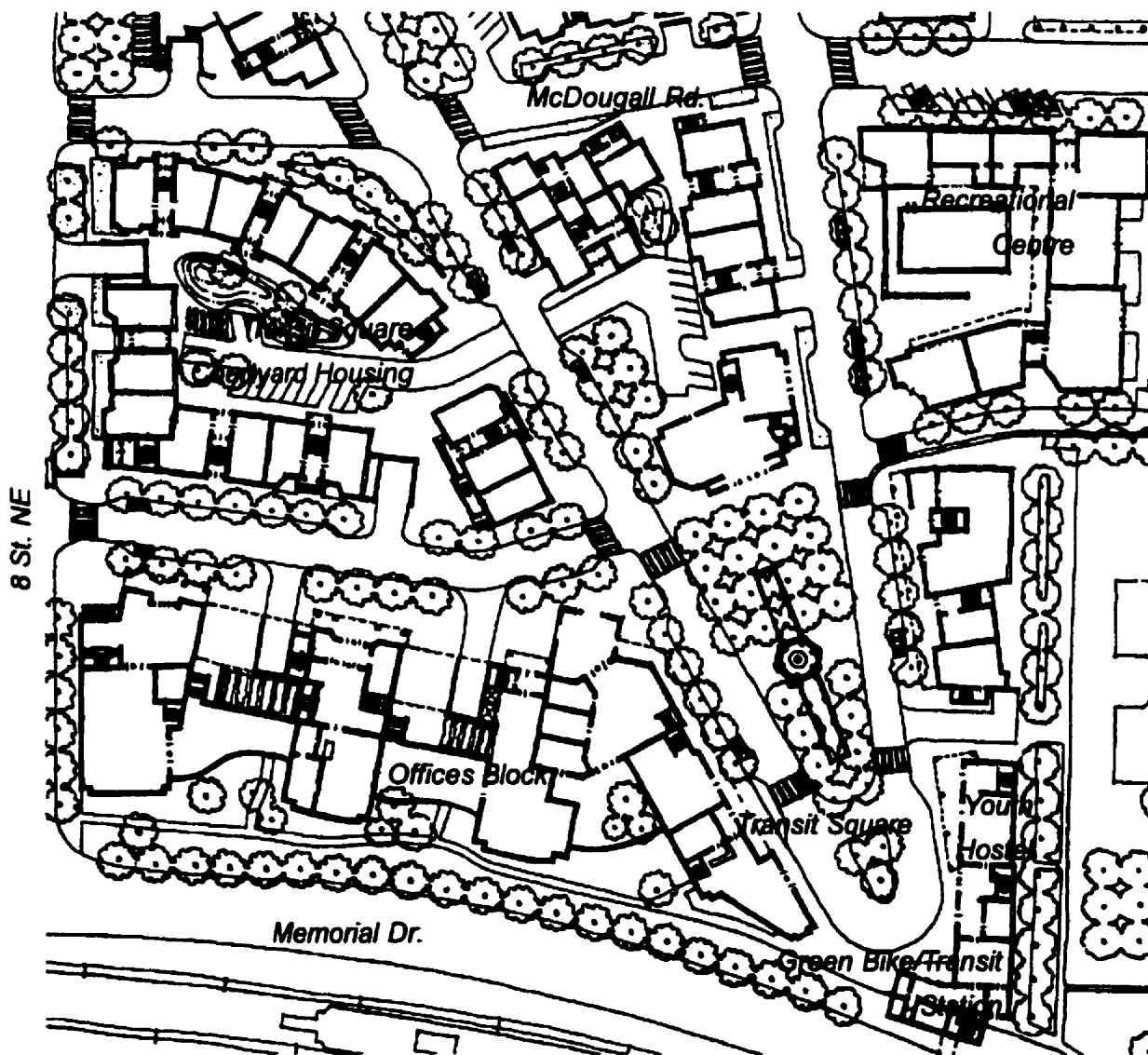
### **1 AVE. NE MIXED USE BUILDINGS**

- \* The ground level is used for retail outlets and offices.
- \* Full length arcades along 1 Ave. NE offer shelters for shoppers for winter conditions.
- \* The upper floors are used for residential and the lower floor is used for office space, introducing the "live and work" life-style.
- \* Underground parking for residents and businesses, street parking for shoppers, and courtyard surface parking for visitors.

### **TERRACE HOUSING**

- \* Family units and houses for singles.
- \* Follows the landform; creates entrances on different levels.

- \* Organized neighbourhood underground parking and bicycle storage.
- \* Patio used for gardening and food production.
- \* Organized waste management: disposal, recycling and reuse.



*Partial of the Concept Plan*

## **TRANSIT SQUARE COURTYARD HOUSING**

- \* Flexible Units fit all family types, single, and senior residents' requirements.
- \* Shared common facilities are: dining hall, convenience store, workshops, children's playroom, guest rooms, storage, underground parking and bicycle storage, etc.
- \* Shared utilities are winter heating, laundry, etc.
- \* Neighbourhood courtyard opens to the south. It is a place for gardening and children playing. It is also used as a parking lot/courtyard for short time visitors.
- \* Street parking for visitors.

## **RECREATIONAL CENTRE**

- \* Surrounded by the existing senior housing, proposed residential buildings, emergency hospital. Close to the play fields, the children's cottage, and the existing tennis courts.
- \* Close to the LRT station and bus stops.
- \* Includes outdoor swimming pool, play ground, park and indoor gym, sports facilities.

## **TRANSIT SQUARE**

- \* Surrounded by office buildings, residential buildings and retail outlets.
- \* It is a public transit centre on the city's pathway system. An LRT station and a bus stop are located here.
- \* The transit building is located at the southern end. It not only offers shelter for winter, but also grocery-shopping facilities.

## **OFFICES BLOCK**

- \* Close to the LRT station and bus stations to encourage people to use public transit.
- \* Beside city's pathway system. Spectacular view to the Bow River.

- \* Provides job opportunities for both community residents and the city as a whole.
- \* Ground level used for coffee shops and restaurants.
- \* A day-care centre is located in the building.
- \* Underground parking and street parking.

## **YOUTH HOSTEL**

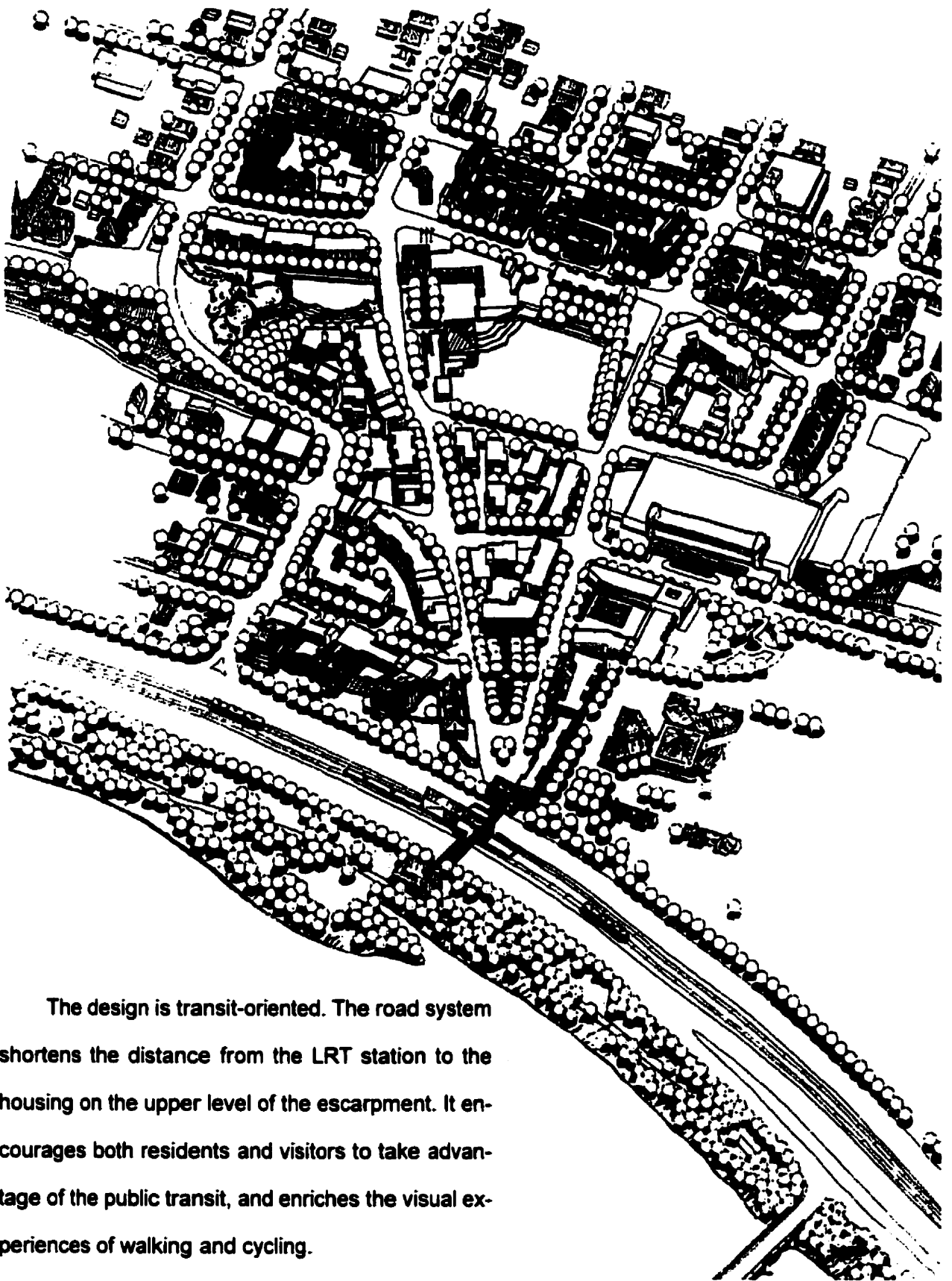
- \* Close to the LRT station, bus stops and city's expressways.
- \* Close to Downtown Calgary, and city's pathway system.
- \* Offers accommodation, food services and entertainment.
- \* Offers bicycle rental, repair and storage.
- \* Ground level is used for restaurants and tourists' stores.



*Transit Square Looking NE*

A pathway system links a series of public spaces. Each place has its own identity and function, and at the same time, they work together to satisfy different needs.





The design is transit-oriented. The road system shortens the distance from the LRT station to the housing on the upper level of the escarpment. It encourages both residents and visitors to take advantage of the public transit, and enriches the visual experiences of walking and cycling.

# CONCEPT PLAN FACT SHEET

## OVERALL SITE COVERAGE:

Total Study Area:	13.61 hectares/33.64 acres
Commercial:	0.3 hectares/0.77 acres
Mixed-use (Commercial/Residential):	1.2 hectares/3.07 acres
Residential:	2.5 hectares/6.40 acres
Institutional (Community Centre & Emergency Hospital)	0.8 hectares/2.05 acres
Recreational:	0.1 hectares/0.25 acres
Public Open Space:	3.7 hectares/9.47 acres
Roads:	1.9 hectares/5.00 acres

## PROJECTED FLOOR AREAS:

### COMMERCIAL:

Retail Outlets:	6,000 sq. m./64,500 sq. ft.
Medical Based Business:	3,000 sq. m./32,250 sq. ft.
Offices:	10,800 sq. m./116,100 sq. ft.

### RESIDENTIAL:

Townhouses:	6,800 sq. m./ 73,100 sq. ft.
2-storey Walk-up Units:	43,700 sq. m./ 469,775 sq. ft.
(Include Live & Work Units:	24,000 sq. m./ 258,000 sq. ft.)
Apartments:	61,120 sq. m./ 657,040 sq. ft.

**INSTITUTIONAL:** 15,000 sq. m./ 161,250 sq. ft.

**RECREATIONAL:** 2,000 sq. m./ 21,500 sq. ft.

## HOUSING: NUMBER OF UNITS

Townhouses:	44 units
2-storey Walk-up Units:	280 units
(Include Live & Work Units:	140 units)
Apartments:	714 units

## APPROXIMATE SIZE OF HOUSING PROTOTYPES:

### TOWNHOUSES:

44 units ranging in size from 1400 sq. ft. to 2000 sq. ft.

Parking provided underground with 1 stall per unit

**2-STOREY WALK-UP UNITS:**

280 units ranging in size from 1400 sq. ft. to 2000 sq. ft.

Parking provided underground with 1 stall per unit

(Live & Work Units also have additional street parking and underground parking)

**APARTMENTS:**

714 units ranging in size from 650 sq. ft. to 1100 sq. ft.

Parking provided underground with 1 stall per unit

(Visitors' Parking for all housing will be on-street or in a courtyard.)

**ESTIMATED "BUILT-OUT" NEW RESIDENTIAL POPULATION:**

**TOWNHOUSES: 106 to 136 people**

Assumes family occupancy of 2.4 persons/unit (Bridgeland-Riverside average) to 3.1 persons/unit (Calgary average)

**2-STORY WALK-UP UNITS: 672 to 868 people**

Assumptions are the same as those of Townhouses

**APARTMENT: 957 to 1107 people**

Assumes family occupancy of 1.34 persons/unit (Bridgeland-Riverside average) to 1.55 persons/unit (Calgary average)

**TOTAL ESTIMATED POPULATION: 1735 to 2111 people**

(Source: Data is based on 1996 Canada Census Information)

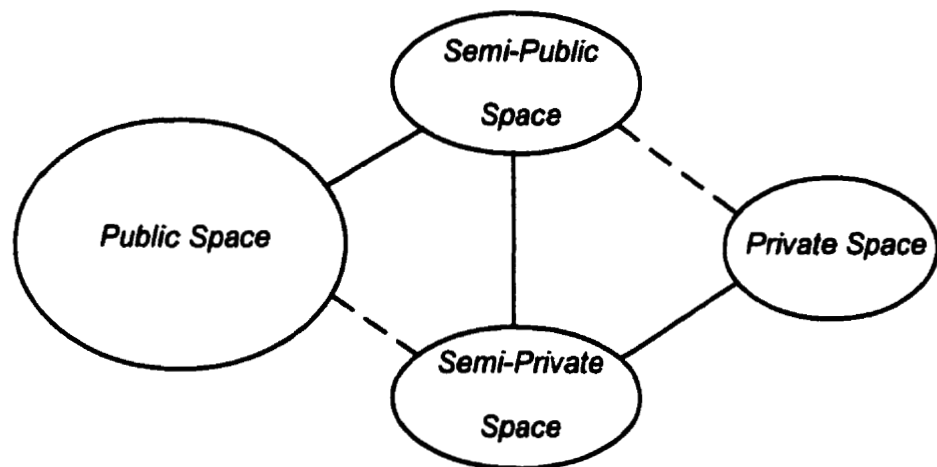
**GENERAL AGE BREAKDOWN OF RESIDENTIAL POPULATION:**

<b>AGE</b>	<b>Number of People</b>
0-4	121 ~ 147
5-19	364 ~ 443
20-24	121 ~ 147
25-34	312 ~ 380
35-44	330 ~ 401
45-54	208 ~ 253
55-64	121 ~ 147
65-74	87 ~ 106
Over 74	52 ~ 63

(Source: Data is based on 1996 Canada Census Information)

## 2.4 TYPES OF SPACE

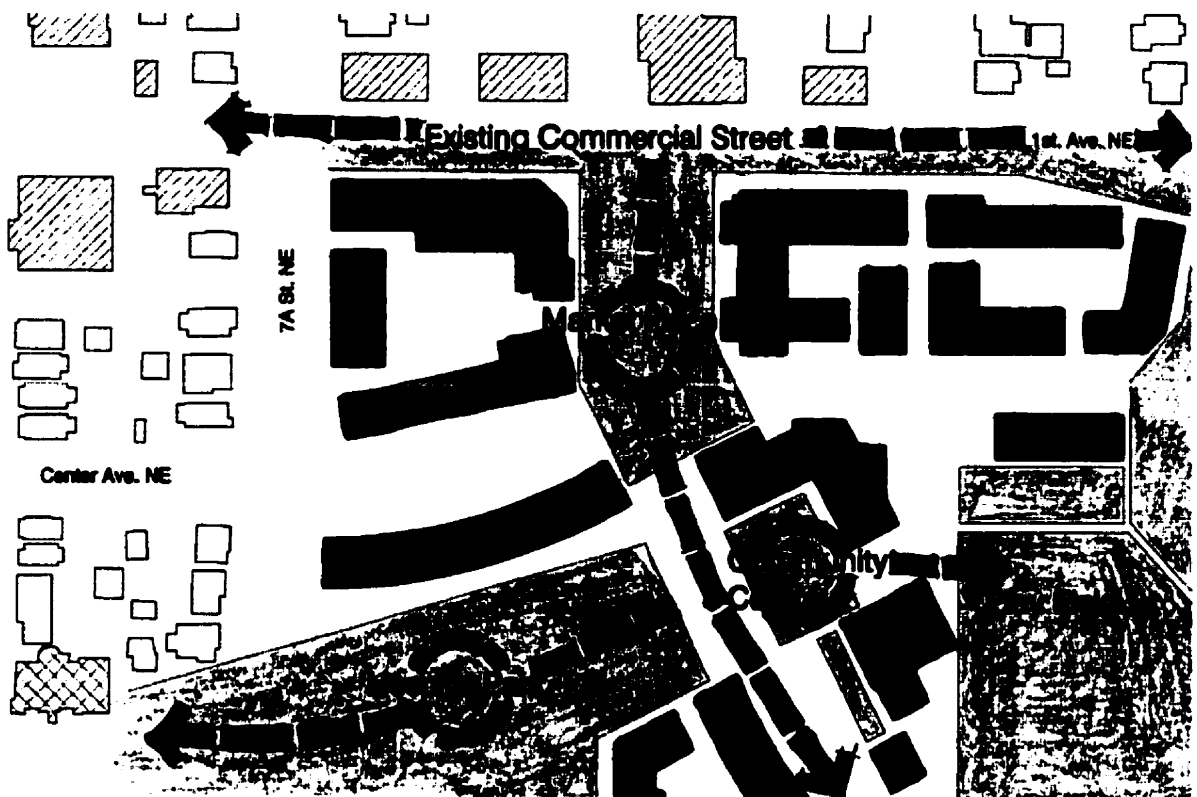
Generally, there are four major types of space in the design scheme i.e. public space, semipublic space, semi-private space, and private space. They link to one another in various ways, which enrich the sensory experiences of the visitors.



### 1. **PUBLIC SPACE**

Public space is the major outdoor gathering space, such as a plaza, market, square, park, play field, etc. They are the places used by both residents and visitors. Civic events take place here. They provide cultural, economical, political, psychological centres for the whole community. The potential users include people from other parts of the city.

In this design scheme, public space indicates the Civic Centre, the Transit Square, the Clinic Street and the 1st Avenue Commercial Street.



*Civic Centre Spatial Composition*

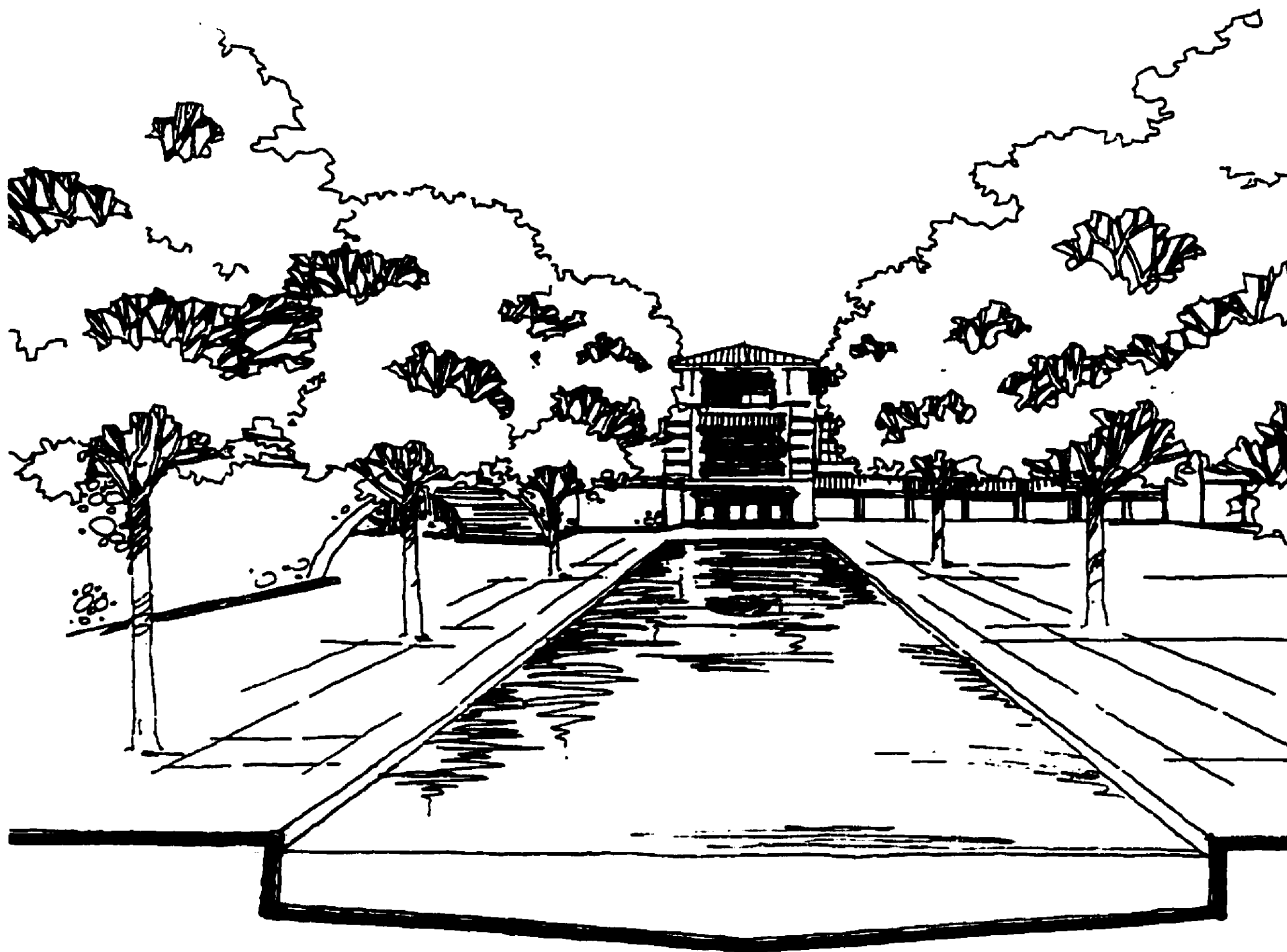


*Market Place Looking South*

## **CIVIC CENTRE SPATIAL COMPOSITION**

### **A. MARKET PLACE**

The Open Market is located along 1 Ave. NE existing commercial street, and surrounded by the Community Centre and commercial/residential mixed use buildings. It reinforces the existing commercial activities on 1 Ave. NE. The open space allows flexible uses of this outdoor place.

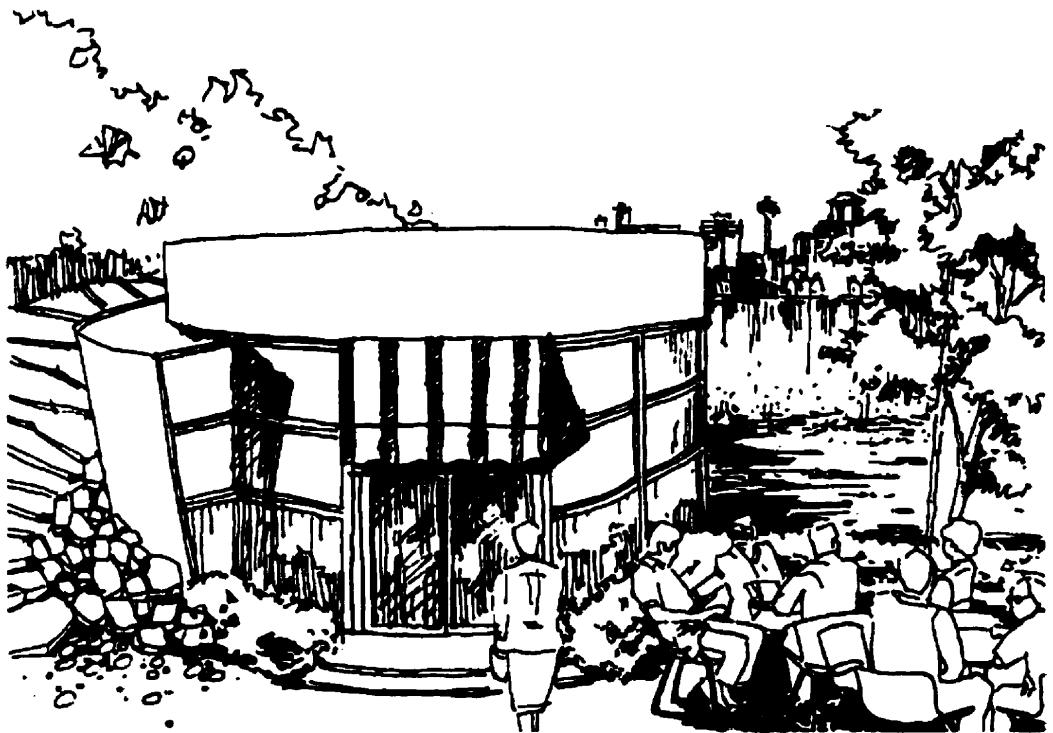


*Community Centre Looking North (The path under the arch of the bridge on the left leads to Hospital Park)*

### **B. COMMUNITY CENTRE**

The Community Centre is a place for community events and civic activities. It is also an educational centre.

The community operated greenhouse is a local food production centre, as well as a biotechnology demonstration centre. It supports private gardening. Centre Square sits on the lower level, offering a quiet gathering place. The under bridge pathway leads to Hospital Park.



*Hospital Park Looking SW (A coffee shop in the middle ground)*

#### **C. HOSPITAL PARK**

Hospital Park is located on the site of the former General Hospital, at the centre of the community. A pathway leads from the Community Centre to the landmark, St. Matthew's Lutheran Church, and to the escarpment. It is a place for all-seasonal activities. Water features offer a place

for people to enjoy the natural landscape, and to store the rainwater for irrigation. In winter, the amphitheatre can be flooded to make a field for winter sports. Coffee shops, nearby retail outlets and restaurants provide a place to sit down and enjoy the beautiful skyline of Downtown Calgary.



*Play Field*

**D. PLAY FIELD**

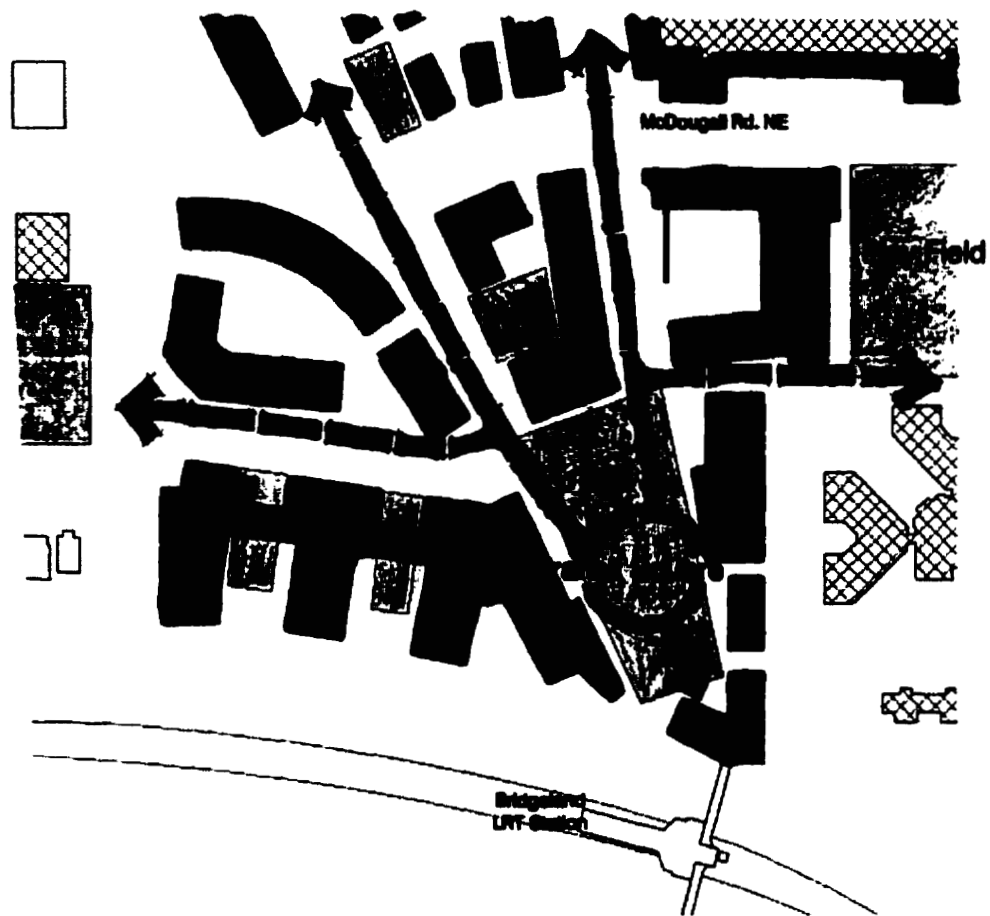
The major community playfield is located on the upper level of the escarpment, and in close proximity to local schools. It is south-facing with the buildings located to the northwest protecting it from the dominant winds, and therefore making it a perfect place for local outdoor sports and family-events.





#### **CLINIC STREET SPATIAL COMPOSITION**

Clinic Street promotes a revival of local medical based businesses. Private clinics, offices and medical stores are located on the ground level of residential buildings along the Clinic Street, leading to the proposed Emergency Hospital, which offers emergency medical treatment for all the inner-city residents.



### **TRANSIT SQUARE SPATIAL COMPOSITION**

Transit Square is a major transit-oriented centre on the site, surrounded by commercial, residential and mixed-use buildings, including offices, retail, coffee shops, restaurants, a day care centre, an indoor recreational centre, and a youth hostel. A bus stop, an LRT station and a "Green Bike Station" are also located here. An enclosed LRT bridge links to the city pathway system; elevators are installed in the station buildings, which connect to each end of the bridge.

## 2. SEMI-PUBLIC SPACE: STREET

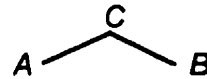
Streets, especially residential streets, are mainly used by local residents. They are the transportation and communication links. The majority of users of these streets do not know each other's name, but can identify the faces they often see here.

### A. Axis

The Axis of streets shift from linear "A—B" to a more dynamic form "A—C—B". The changing of the direction enriches visual experiences and at the same time slows down the through traffic.

A \_\_\_\_\_ B

*Typical City Street Axis*

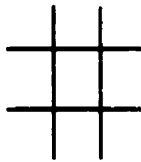


*Modified Bridgeland*

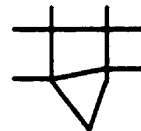
*-Riverside Street Axis*

### B. Grid

The modified grid is more relaxed. It follows the grading changes and the path, linking places in relatively short distances.



*Typical City Gridiron*

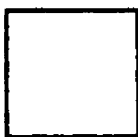


*Modified Bridgeland*

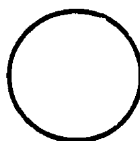
*-Riverside Grid*

### C. BASIC FORMS

The forms of the street space are defined by the buildings that surround it. There are three basic forms: circle, square and polygon. The size, orientation, and variation of composition create the dynamic of the urban space.



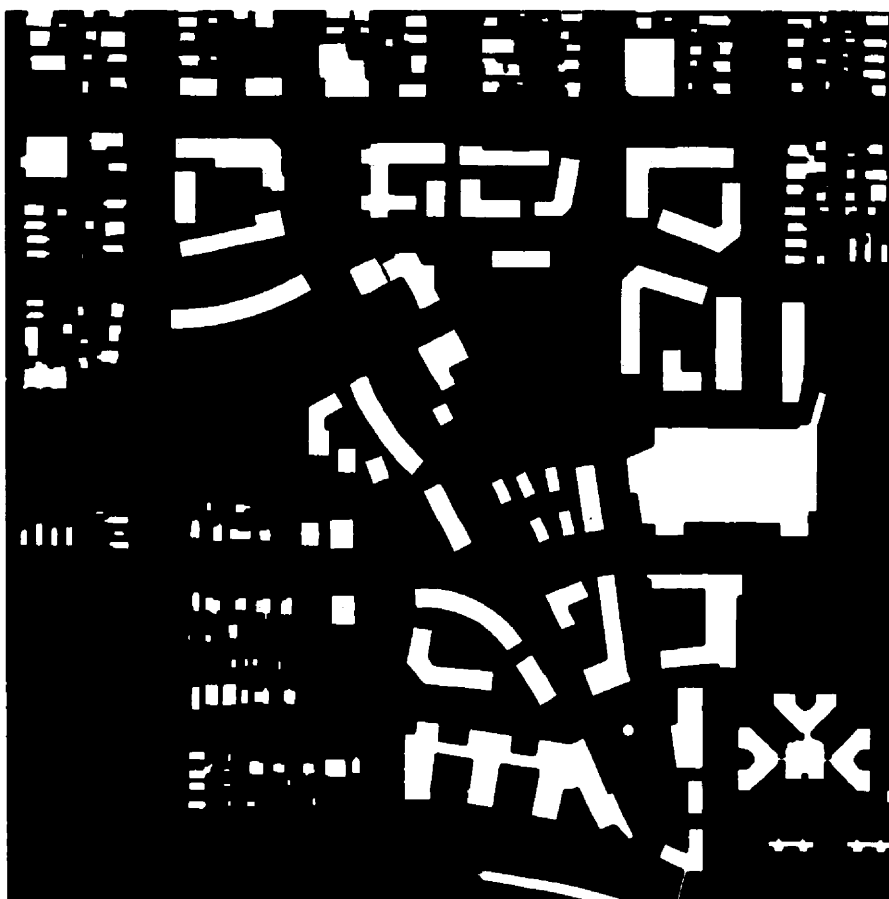
*Square*



*Circle*



*Polygon*



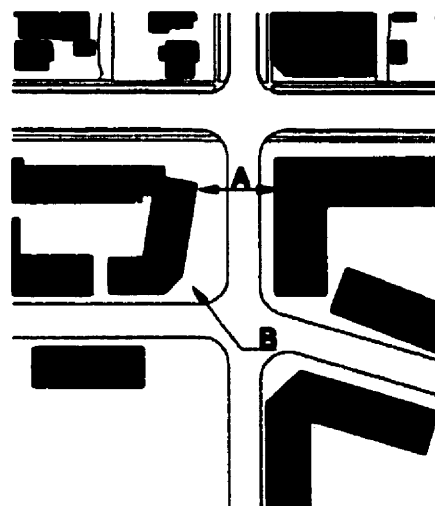
*Figure Ground  
(Overall impression  
of the relationship  
between buildings  
and open space)*

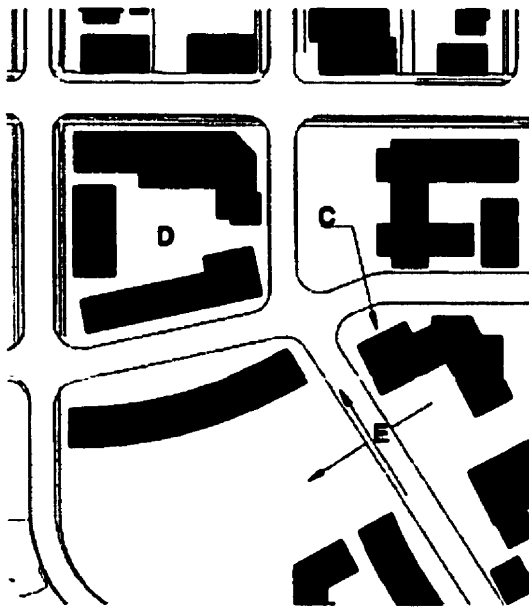
#### **D. SPATIAL COMPOSITION**

The elements of the street space should reflect the local climate. South-facing gathering spaces and the warm indoor spots along the path create a more comfortable microclimate to pedestrians in a winter city.

The crowding together of buildings forms a pressure, which is in direct contrast to the wide square, and by narrowing it, it is possible to maintain enclosure without forbidding the passage of vehicles and pedestrians. (A, F)

Being buildings of special interest, the Community Centre and the commercial building interrupt the alignment of the street and indicate the function and pattern change





from place to place, like a punctuation mark, so that a pause is created. (B, C)

Enclosure emphasizes the physical and psychological boundary between different levels of privacy. It is the basic unit of the comprehensive pattern. Outside, the noise and movement of coming and going; inside, the quietness and human-scale of the courtyard. (D)

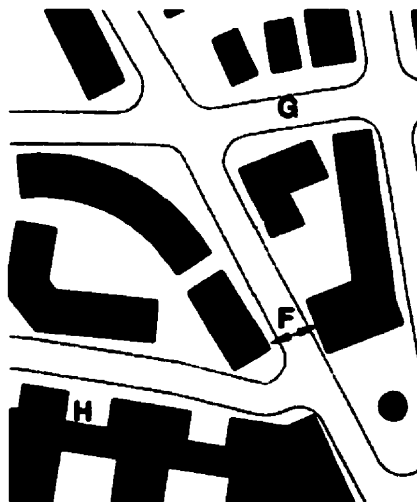
Using different levels to join or separate the activities of various road users: lower level produces intimacy and enclosure; upper level gives exhilaration and exposure.

(E)

The street demonstrates the charm of projection and recession. Instead of a single glance, the eye is caught up by the intricacy of the spaces and the multilayered views.

(G)

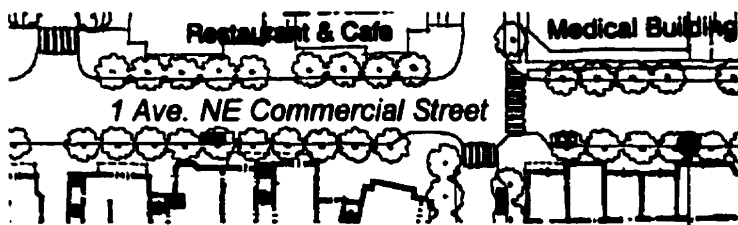
The enclave is seen as an accessible place out of the main directional stream. Set apart from the traffic, it gives the observer the advantage of being able to view the scene from a position of safety and quietness. (H)



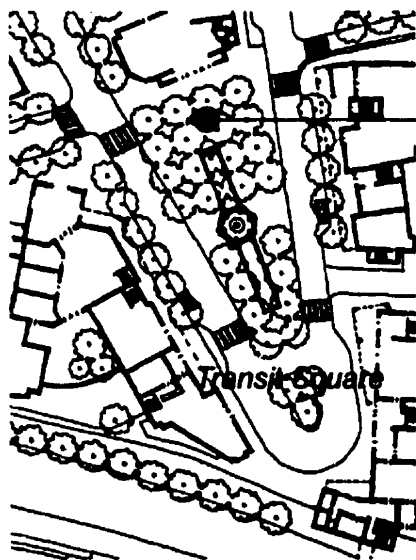
#### VEGETATION

Trees and shrubs add another dimension to the streets. They seasonally change their appearance, and form shadows on the walls and ground. The life and colour it brings lights up the daily life of people.

The varied landscapes also make the street more enjoyable.

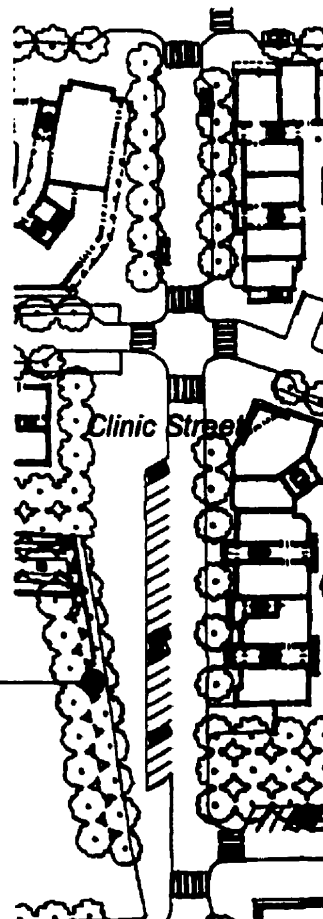


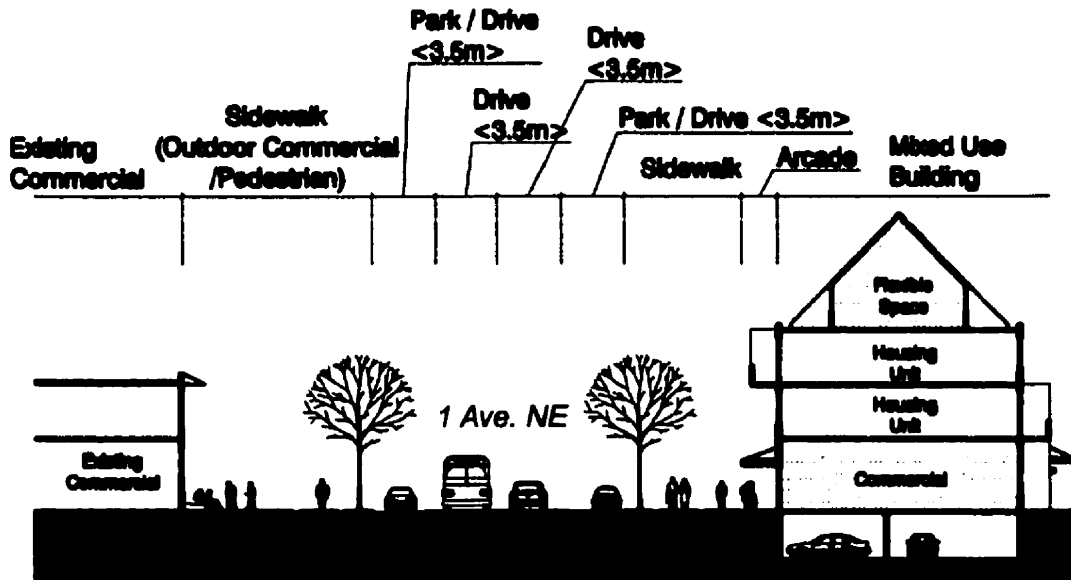
Trees line up along the commercial street with the tiled sidewalk, creating a soft edge between the roadway and sidewalk. The width of streets are varied. The main street has wider driveways for cars and a wider sidewalk on the sunny side for outdoor commercial and pedestrian activities. The residential street is narrower for easy pedestrian crossing (See illustrations on the opposite page).



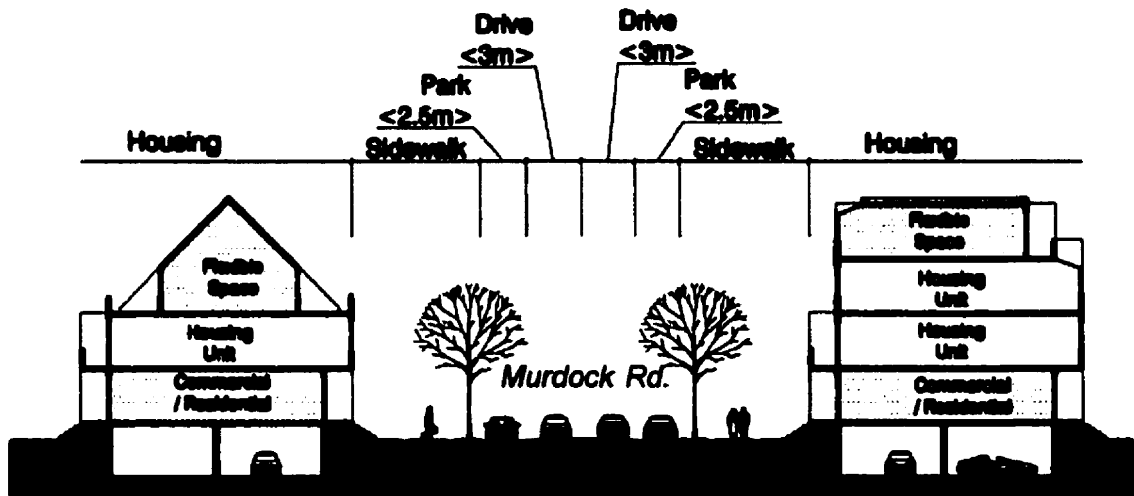
A group of trees together form an outdoor room. Their branches cross each other, leaves cover the sky, creating a feeling of enclosure.

Using trees to create a boundary of a space: the edges are soft, allowing people to look through, even walk through. However, it is still enough to create a psychological border between the traffic and open space.





**Main Street Section**



**Residential Street Section**



### **3. SEMI-PRIVATE SPACE: THE HOUSING CLUSTER**

The neighbourhood is comprised of distinct housing groups to improve aesthetic quality of the community environment, strengthen a sense of belonging, and create a safe community. It is mainly used by the residents who live in the cluster. The relationship between residents is closer than in the street - they know each other.

#### **DENSITY**

Higher density development is a key factor in fulfilling affordability objectives. It is essential in urban redevelopment. Higher density development reduces per capita demand on infrastructure services, allows efficient public transport services, and enables employment, retail services, as well as, educational, cultural, and recreational facilities to be located physically closer to more residents.

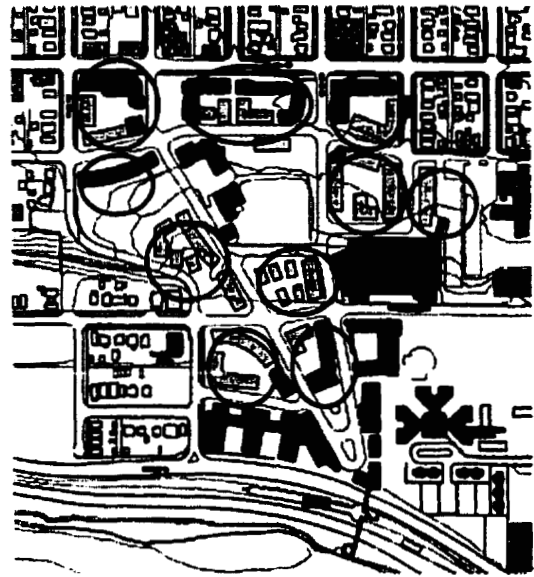
The size of a housing cluster is 25 to 40 residential units, allowing for mixed resident composition of different ages, family size, and incomes.

#### **IDENTITY**

The identity of the housing cluster is enhanced by the spatial arrangement and the architectural design. This includes choice of colour, materials, and landscaping.

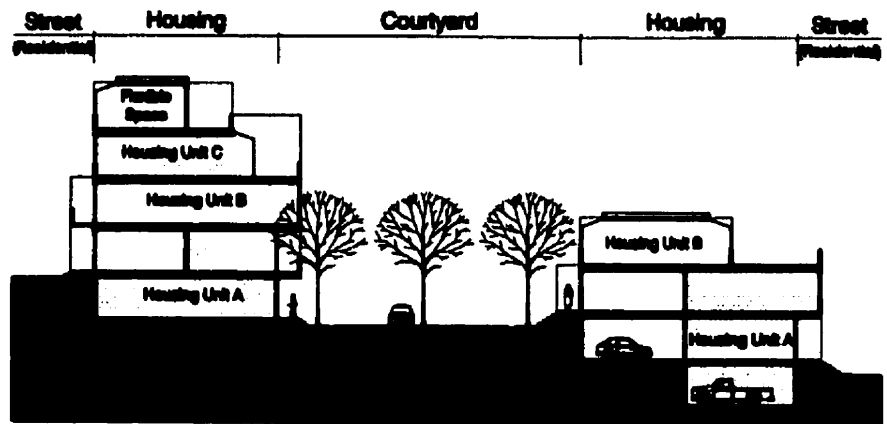
#### **FORM**

Housing clusters are varied in layout and design in order to correspond to the market. The sections on the opposite page illustrate the variety of housing cluster forms. In the commercial area, the layout of the cluster responds to its mixed-use function needs. The offices and retail out-

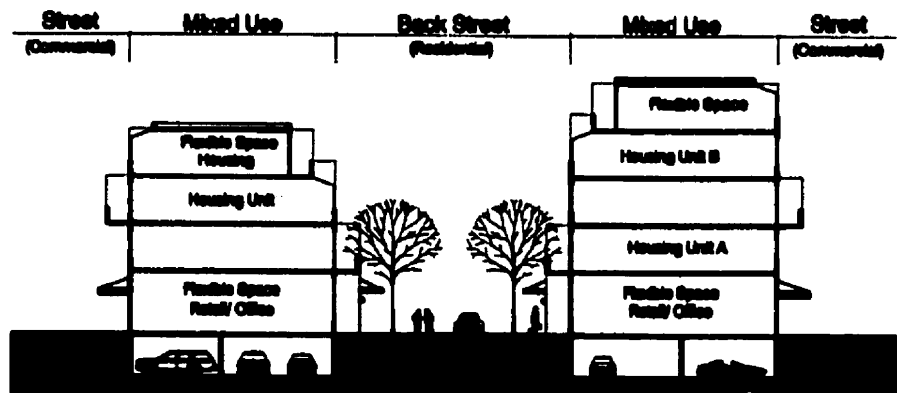


*Housing Clusters*

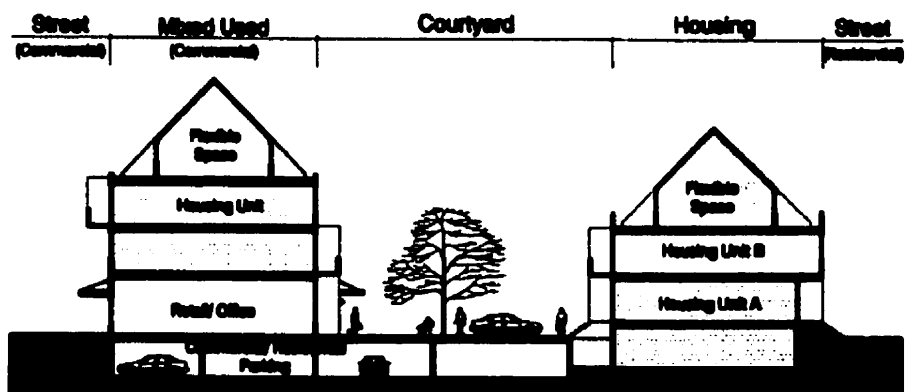




**Residential Area Courtyard Section**



**Back Street Section**



**Commercial Area Courtyard Section**



lets on the ground floor open to the street side, and the entries of the upper floors' residences are located in the courtyard. In the residential area, the size of clusters are various. The larger ones have courtyards in the middle and the smaller ones are served by a back street. (See illustrations on the opposite page).

#### **SAFETY**

Housing, either forms a courtyard or lines the street with windows and doorways on both sides. The presence of different age groups of residents at various time, ensures that violence and vandalism of private and public properties are discouraged.

#### **NEIGHBOURHOOD PLACE**

A neighbourhood place is a common site for residents to communicate with each other and share facilities. Residents can gather for meals, meetings and functions. They help each other take care of the elderly and youth, and manage the green house. They also share guest rooms, workshops, laundry facilities, wastewater treatment, waste management, heating and parking facilities.

It is also an education centre for local sustainable development programs.

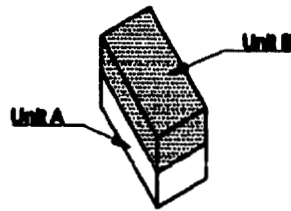
#### **4. *PRIVATE SPACE: THE HOUSING UNIT***

This housing unit is the basic living space of the human settlement. It provides a higher level of privacy. In mixed use buildings privacy is maintained by separating entrances for different users.

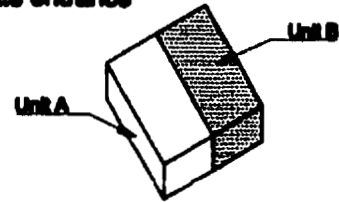
## Housing Unit Combination

**Attached: multi-unit**

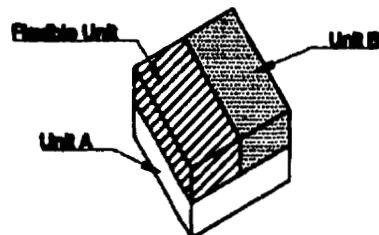
**Stacked**  
2~4 storeys  
Street-facing or court-facing  
Shared entrance



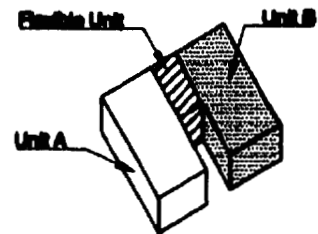
**Row:**  
1~2 storeys  
Street-facing or court-facing  
Private entrance



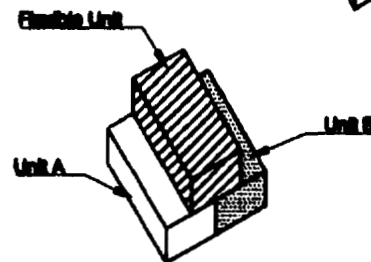
**Stacked with Flexible Unit**  
2~4 storeys  
Street-facing or court-facing  
Shared entrances  
Flexible units separated for other uses or as expansion area for either unit.



**Row with Flexible Unit in between**  
1~2 storeys  
Street-facing or court-facing  
Private entrances  
Flexible units separated for other uses or as expansion area for either unit.

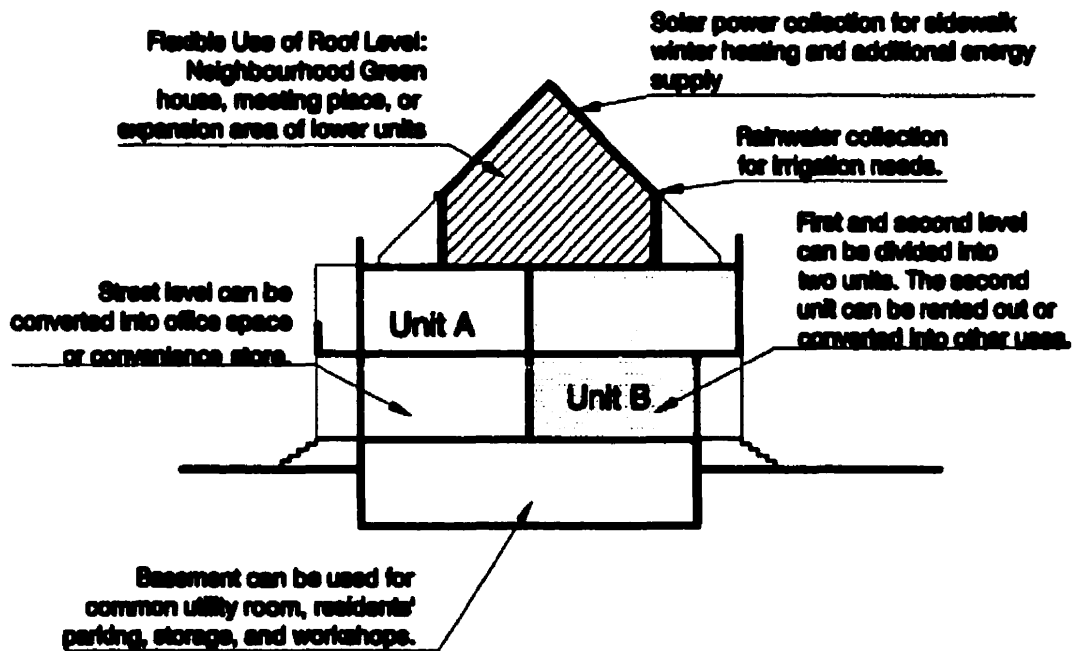


**Row with Flexible Unit on Roof**  
2~3 storeys  
Street-facing or court-facing  
Private entrances  
Flexible units separated for other uses or as expansion area for either unit.



## 2.5 THE HOUSING CONCEPT PROTOTYPES

The houses, with a wide range of sizes, are affordable for all types of families including rental and private ownership. Special housing for the young and the old en-



able these groups to continue living in the neighbourhood throughout their life cycle.

Concrete and steel are used as the structural materials of the building. They maximize the flexibility and adaptability of homes to meet the needs of expansion, conversion, or even functional changes over time.

Roof levels are the areas which have the most flexibility. They can be used as a neighbourhood green house, meeting area, child playroom, or as an expansion area for the units below.

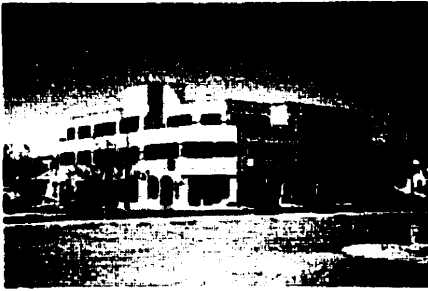
## ELEVATIONS

The building elevations are varied from one another, but at the same time they share some common design principles.

### **\* RESPECT SITE HISTORY**

The site is located in a community that has a strong Italian and German influence. The new developments use existing building styles, similar lots and building size to establish a character for the whole community.

The Bow Valley Centre (the former General Hospital) still has a strong image in the minds of



30. The Medical Office Building on  
1st Ave. NE

Calgarians even after its demolition. The bricks from the old hospital are cleaned and reused on the pavements of major public spaces. Brick tiles are used on the lower part of the new buildings. All of them reflect the history of the site.

#### **\* RESPECT EXISTING BUILDINGS**

On the upper plain of the escarpment, the site is mainly surrounded by two- to three-storey residences and commercial buildings. New developments in this area are three to four storeys high with gable roofs.

On the lower plain of the escarpment, the density is higher. The buildings are about four to five storeys high with flat roofs, to match the surrounding building style.

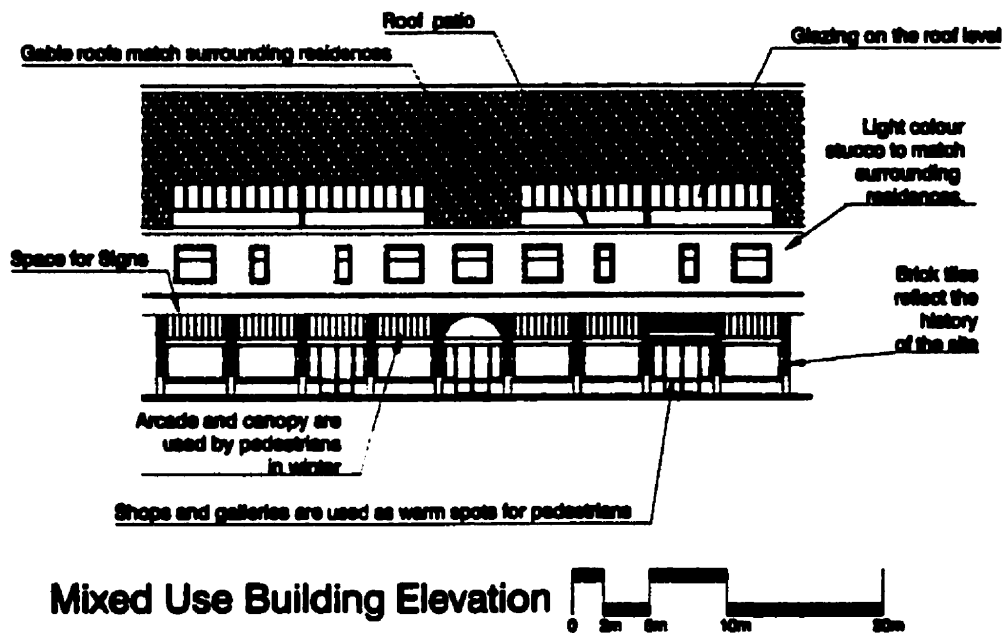


31. The Hospital Building under  
Demolition



### **Residential Building Elevation**





## 2.6 SUSTAINABLE COMPONENTS

The design scheme integrates ecological, social and community economic goals that are conducive to sustainability performance and community management of the different local environments. Through conservation and alternative energy use, local food production, water management and wastewater treatment, less polluting transportation modes, and recycling and compost systems, the urban life style can be maintained in a manner that is environmentally friendly. With the higher density mixed-use development, the distance among living, learning, working, and playing has been reduced so that these activities are within walking or less-polluting commuting distances. The integrated medical services network on the Clinic Street maintains the strong identity of the community. Its flexibility makes it an alternative from the traditional centralized hospital and makes the whole medical complex more adaptive to the market. The role of the Community Centre will be not only organizing and serving the residents, but also educating people and producing local food products.



32.

## CHAPTER 3

# A DAY IN THE LIFE OF BRIDGELAND-RIVERSIDE

*The following story is a glance of the daily life of the people who live in Bridgeland-Riverside. It portrays a living image of the design scheme.*

This is an ordinary summer morning in Bridgeland. Susan gets up at 6:30 a.m., wakes her son, Dave, and starts to prepare breakfast. She broke up with her boyfriend two years ago, and is a single mom now. She has just moved to Bridgeland, and rents an apartment close to Transit Square. Around 7:30 a.m., Susan takes Dave to the day-care centre located at Transit Centre, and rents a bicycle. Crossing the LRT bridge, she joins the early-birds heading to work in downtown. Susan prefers to bike to work as long as the weather permits. Today is sunny; exercise enthusiasts are walking, biking, jogging, and roller-

33.



blading on the path along the river.

Around eight o'clock, Transit Square is crowded with people coming and going to work. Dave's friend Lynn and her father, Tim, are among them. Tim works in an office building just beside the Transit Square. Everyday he takes the LRT to work. Lynn's day-care is conveniently beside his office, so his duty is dropping her off and picking her up everyday - and he loves to do it.

Meanwhile, Bill, an Architect opens his office. He has just bought a two-storey walk-up unit, which is on 1st Avenue NE. He uses the first level as his office and lives with his family on the upper level. His son, Peter, is in Grade six. Since his school is closed for the summer, he and his friends have joined the summer camp organized by the community. Today they will go to the common house just across the courtyard to take a pottery class.

Around 10:00 a.m., Bill leaves his office and walks down 1st Avenue. It is a busy street. Shoppers and visitors come and go. There are sidewalk cafes. People are sitting around tables chatting. The Italian and German stores, with flags flying, make you think of Europe. When Bill passes a grocery store. He sees Mr. Wang the store-keeper and they greet each other. Bill feels that Peter's accident in February has brought his family and the Wang's closer. He feels much more confident that good people like Mr. Wang will make sure that the kids are safe while they use the streets.



34.



35.



36.





37.

While Bill was walking, a young man named Gary ran into him. Gary is visiting from Australia and arrived two days ago. He is staying in the youth hostel just beside the LRT station. It is a popular place and he feels lucky to find himself a room this summer. This morning, he rented a bike and explored the Bridgeland-Riverside area. He is a bit lost and asks Bill for directions to the Favorite Memory coffee shop.

Mrs. Lambert is buying fruit in the nearby open market. The vegetables and fruit are from the community centre greenhouse and neighbourhood gardens, so they are very fresh. Her friend Nancy works in the community greenhouse as a consultant. They both stay in the senior's housing nearby. There are quite a few seniors living in the area. It is a pleasant neighbourhood and always has plenty of things to do. Mrs. Lambert joined a painting class at the community centre two weeks ago, and she goes to class every Tuesday and Thursday afternoon.

Nancy is always busy. Since her retirement, the community hired her as a consultant to give technical support to the Green House project. Now, the products not only support the community market, but are also sold around the city. She always says her assistant, Tom, helps her a lot. Tom was a street kid. He has been working here since the community built the green house. This gives him an opportunity to learn something he wants to do. He is an expert in managing urban farms now, and gains respects

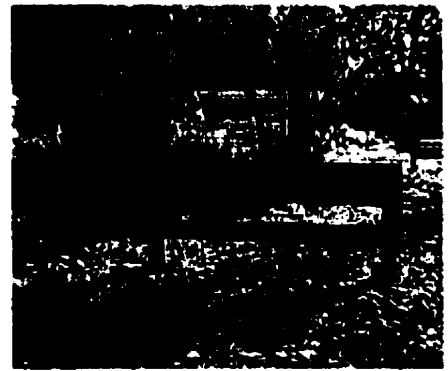
from his co-workers.

This afternoon, Mrs. Lambert will go to the new Emergency Hospital, her daughter in-law just gave the birth to her second grandson. Time flies, it seems like yesterday that her son was born in the old General Hospital, which was here.

On the play field, some boys are playing baseball. Some people are sitting on the steps beside the field watching. Patrick is a little bit sad, since he has to go to Dr. Johnson's clinic with his mom to have an annual checkup.

About noon, people leave their offices for the lunch break. The restaurant and coffee shop patios along the streets are packed. In the Hospital Park and the play fields, people are sitting or lying on the grass, enjoying the sun, others play frisbee, and more jog along the paths. Meanwhile, the visitors and shoppers wander around the streets. Some seniors are playing croquet on the field.

Dr. Johnson looks out of her window, and takes a deep breath. She has worked in the Bridgeland-Riverside area for almost twenty years. At first she worked in the former Bow Valley Centre. After the closure of the hospital, she opened her own office on the Clinic Street. She had numerous opportunities to work in other hospitals, but she gave them up. She can't explain what kept her here. Today after work, she will meet her old co-workers from the former Bow Valley Centre at the Favorite Memory Coffee Shop in Hospital Park. She likes it there. The old



38.



39.

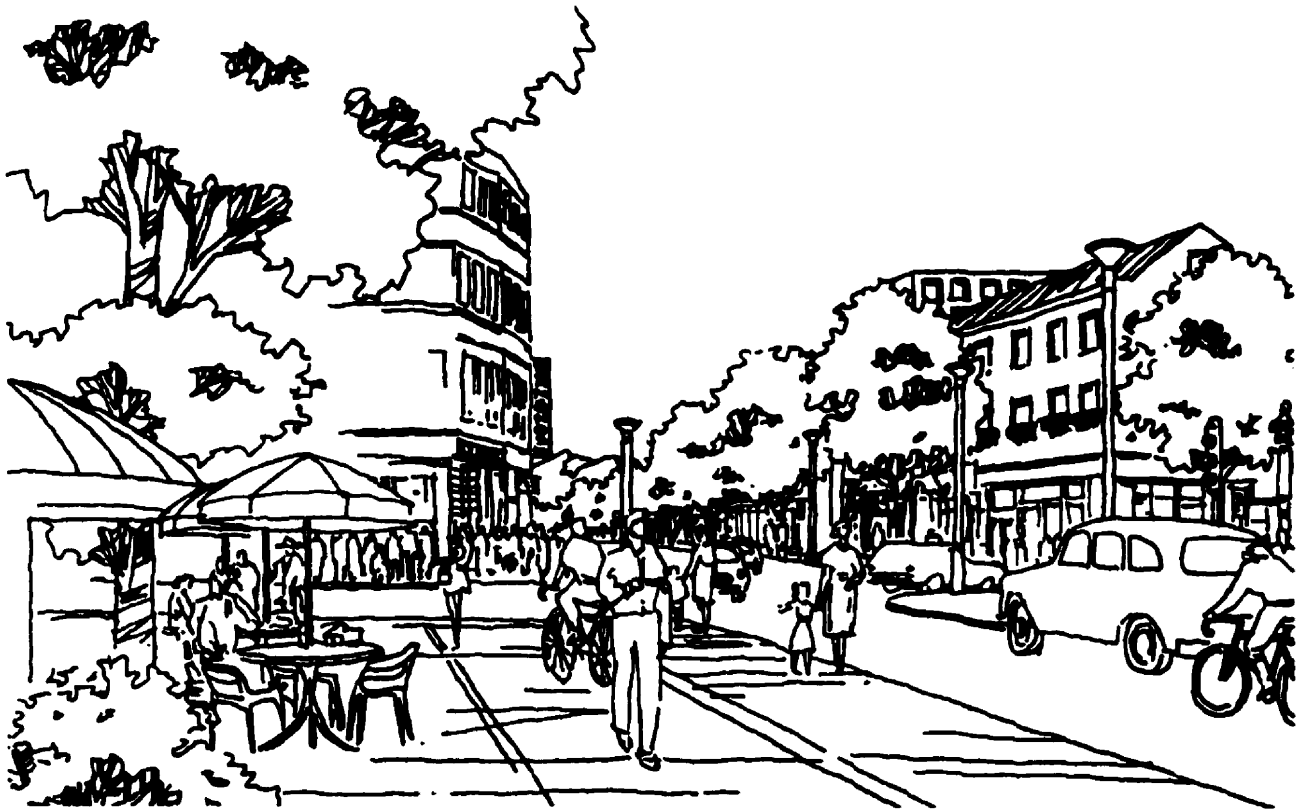


40.

photos and paintings of the Bow Valley Centre hanging on the wall always bring back fond memories. There will be a concert in Hospital Park tonight. A local jazz band will perform at the amphitheatre, and the excitement around the coffee chop is heightened.

It is about 8:00 p.m., outside one still can hear music coming from Hospital Park. Bill sits in a bookstore on 1st Avenue, reading and drinking coffee; in the meantime, Susan just finished cleaning dishes, and is about to take the waste to the recycle room down stairs; Gary sits in the amphitheatre with his new hostel friends, enjoying the music. He really likes his trip to Canada. This afternoon, he visited the museums in downtown. Tomorrow he will go with his friends to Banff.

11:30 p.m., it is quiet outside, only the streetlights are on. The moon is shining in the dark sky. A new day will soon begin.



*Clinic Street Looking North*

## **CHAPTER 4**

### **TO CONCLUDE**

**“Design is the fundamental skill required to restructure urban space — a skill that distinguishes it from other activities of planning and engineering the built environment. Without design, the modern landscape would evolve in the absence of judgements on aesthetics, visual quality, and social concerns.” (Trancik, “Finding Lost Space”, 1986)**

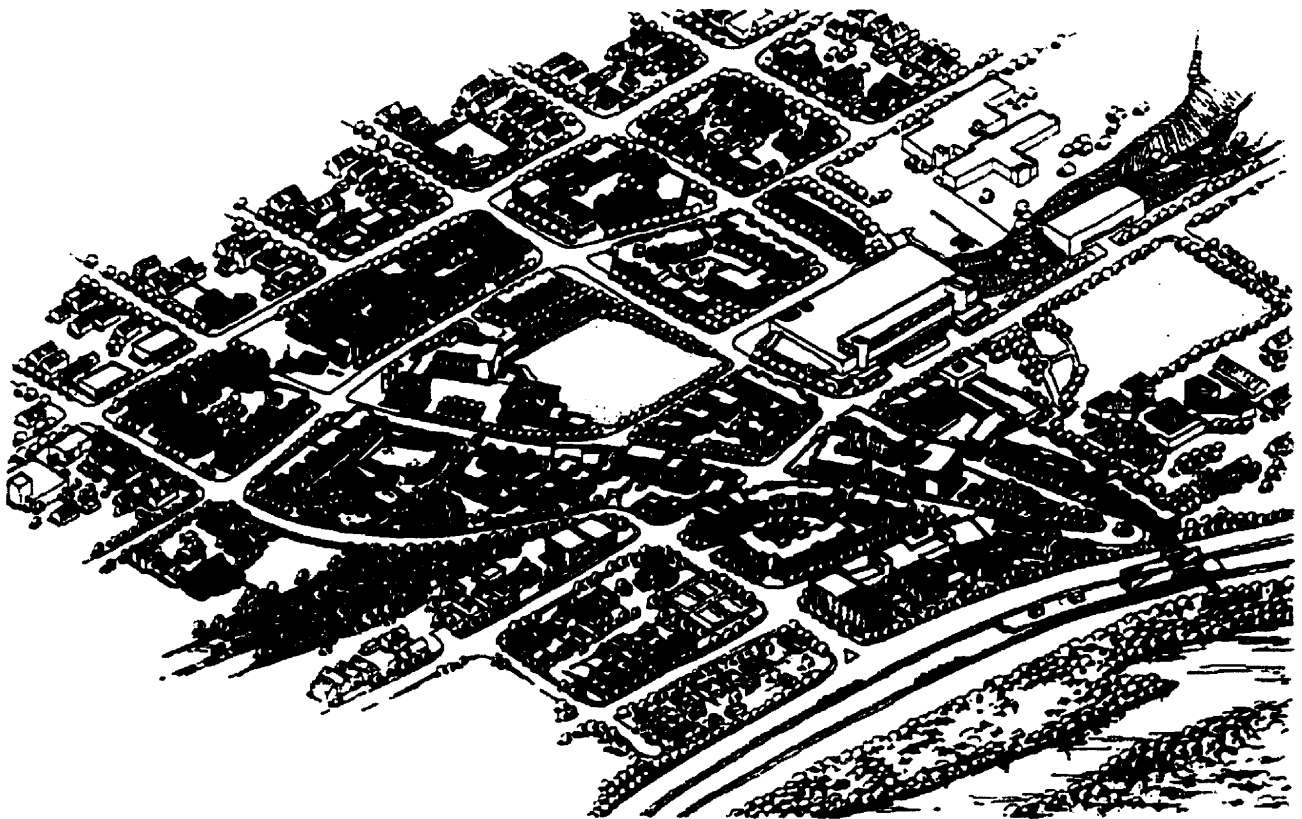
**The proposed scheme is an infill development in an older inner-city community. Its objective is to improve the quality of common people’s everyday life. The new development should be in harmony with the predominant existing pattern, and by integrating into the local community, create a more lively, more dynamic, more diverse, and more enjoyable place.**

**The design scheme promotes a wide range of human activities and sustainability in an urban context. The relatively high density would reduce the investment on infrastructure services and fulfill affordability objectives. The mixed use of buildings would create a diverse, dynamic and safe environment for both residents and visitors. Convenient public transit, a more enjoyable pathway system, higher density settlements, close-by employment and ser-**

vices would shorten the traveling distance and reduce the use of cars. The new clinics and Emergency Hospital maintain the dominant feature of the community, and are more adaptable to the market. The "urban farm" and the neighbourhood place would provide a common area for residents to communicate and socialize. They provide local job opportunities and educational programs.

The study suggests that in addition to the existing community organizations, a series of special self management organizations, such as, the Clinic Street Association, the Friends in the Neighbourhood, and the Urban Farm Management Group would be formed. They would be the basic elements of the new community organization, given the new dynamics of the neighbourhood.

This design also offers guidelines for future architectural designs. It gives a series of suggestions on building types, height, style, structure and material. Yet, it also leaves adequate room for architects to express their creativity. This scheme presents a framework for an environmentally more responsible, economically more independent and socially responsive inner-city Bridgeland-Riverside neighbourhood.



## **APPENDIX I**

# **CALGARY TRANSPORTATION PLAN**

### ***STRATEGIC PLANNING OBJECTIVES***

1. Encourage sensitive types of housing intensification in all neighbourhoods, in accordance with local plans, to promote a more compact, adaptable form.
2. Encourage new housing close to transportation facilities and within mixed-use centres to support transit and pedestrian mobility.
3. The transit system will offer Calgarians a reasonable alternative to auto travel by:
  - \* Facilitating access to transit for seniors and people with disabilities
  - \* Integrating transit with other modes of travel.
4. The City of Calgary will facilitate mobility for the transportation of disabled and low income persons by:
  - \* Continuing to improve the pedestrian environment accessibility to transit service, public facilities and community services.
5. To encourage walking, the pedestrian environment will be a design element in all land uses and plans for roads, LRT and transit facilities.
6. Cycling is recognized as a component of the City's transportation system.

*Source: Calgary Transportation Plan, 1995*

## **APPENDIX II**

### **GOALS OF**

### **THE BRIDGELAND-RIVERSIDE**

### **AREA REDEVELOPMENT PLAN**

1. To increase residential densities in the appropriate locations.
2. To implement the policies of the Calgary General Municipal Plan.
3. To provide opportunities for a wider range of residential alternatives for different age and income levels.
4. To provide for the development of a land use pattern that will be better able to be served by public transit.
5. To improve the physical environment within the community.
6. To develop a more comprehensive strategy dealing with amenities such as recreation and open space.
7. To provide for opportunities that would allow for the increased viability of commercial development catering to residents of the community.
8. To conserve and stabilize the family-oriented areas of the community and to ensure their long-term viability.

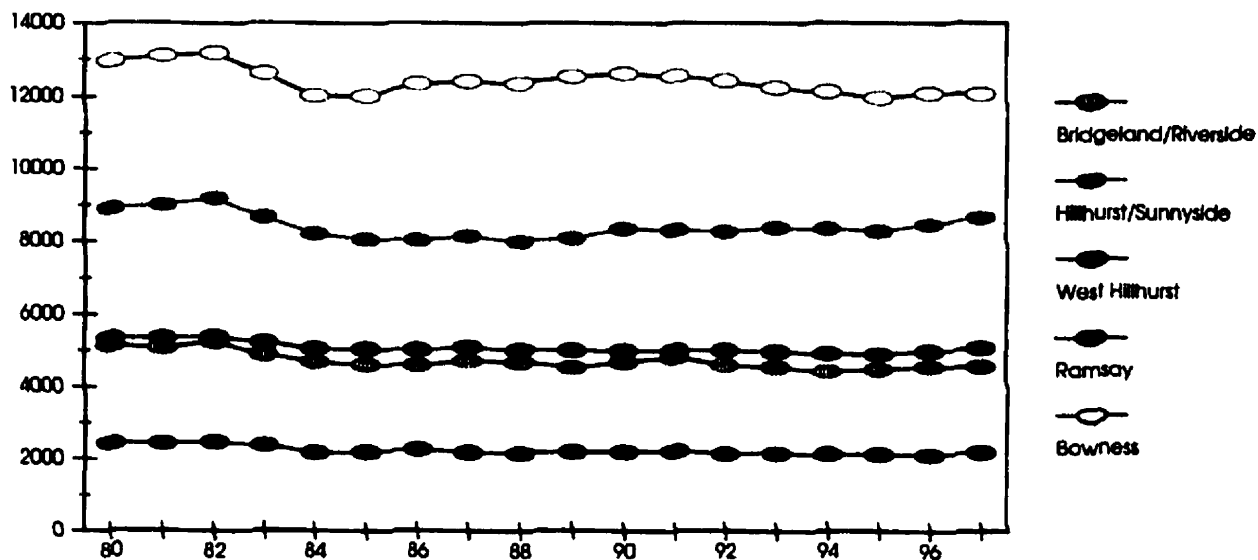
*Source: Bridgeland- Riverside Area Redevelopment Plan, 1995*



## APPENDIX III

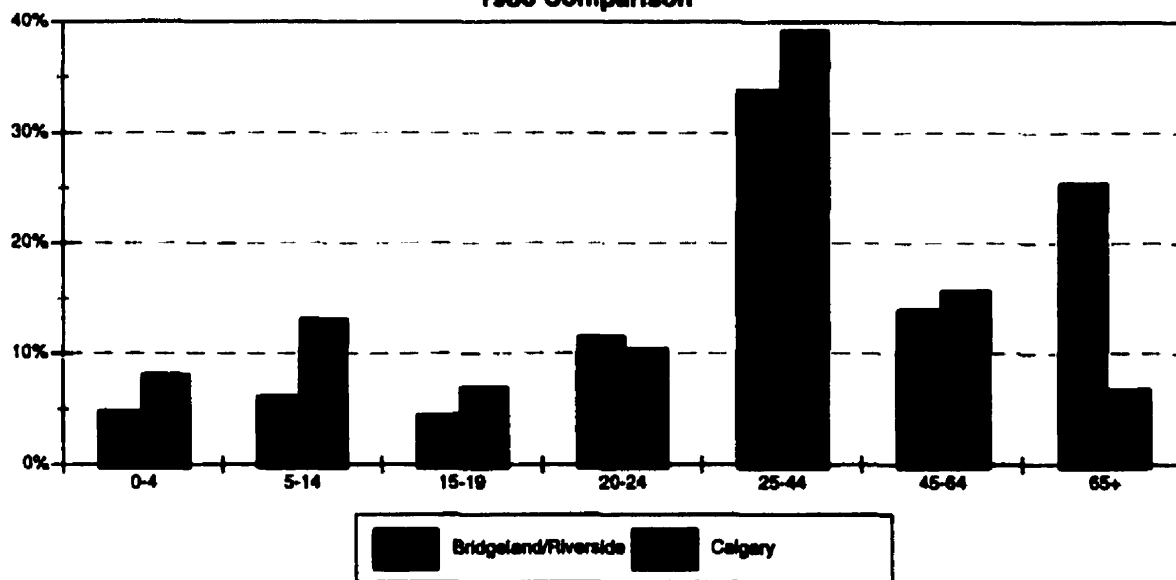
### POPULATION SIZE AND AGE DISTRIBUTION

**Population Size  
1980 - 1997**



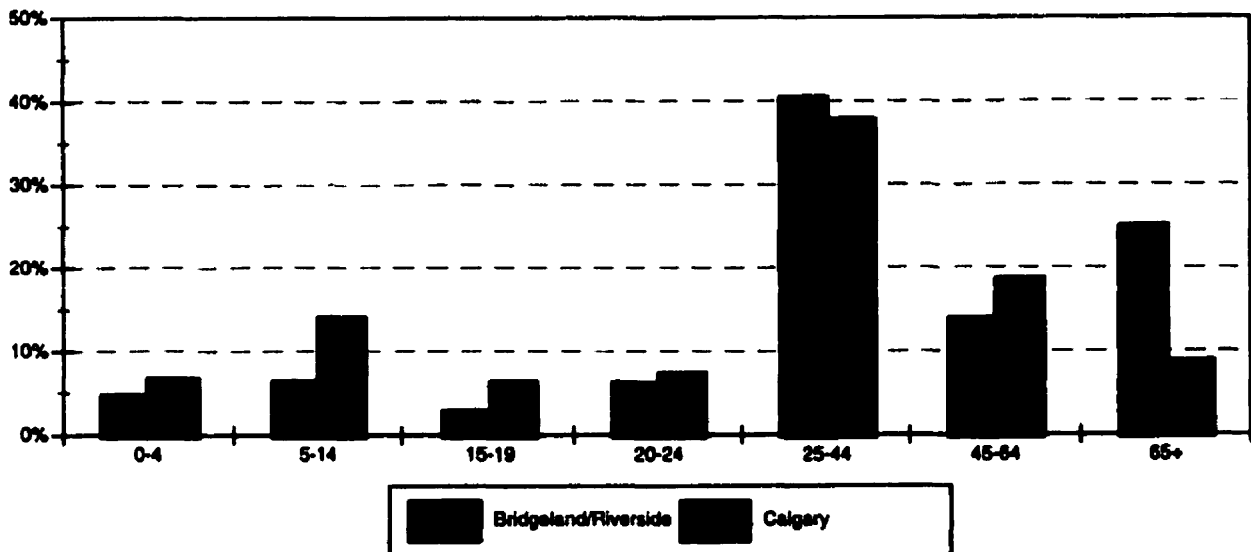
Source: City of Calgary Civic Census (1987, 1997)

**Age Distribution  
1986 Comparison**



Source: City of Calgary Civic Census (1987)

### Age Distribution 1996 Comparison



Source: City of Calgary Civic Census (1997)

#### Socio-Economic Profile

	Bridgeland-Riverside	City-wide Average
Recipients of Assured Income for Persons with Severe Handicaps <sup>1</sup>	3.1%	1.1%
Recipients of Support for Independence <sup>1</sup>	5.2%	2.9%
Seniors receiving Guaranteed Income Supplement <sup>2</sup>	48.8%	30.2%
Persons lacking secondary school certification <sup>2</sup>	38.3%	25.7%
Persons with a university degree <sup>3</sup>	7.2%	14.6%
Unemployment rate <sup>3</sup>	12.5%	8.0%
Median household income <sup>4</sup>	\$23,419	\$44,084
Users of Special Needs Tax transportation <sup>4</sup>	3.6%	1.0%

<sup>1</sup>Province of Alberta, Family Social Services, 1996.

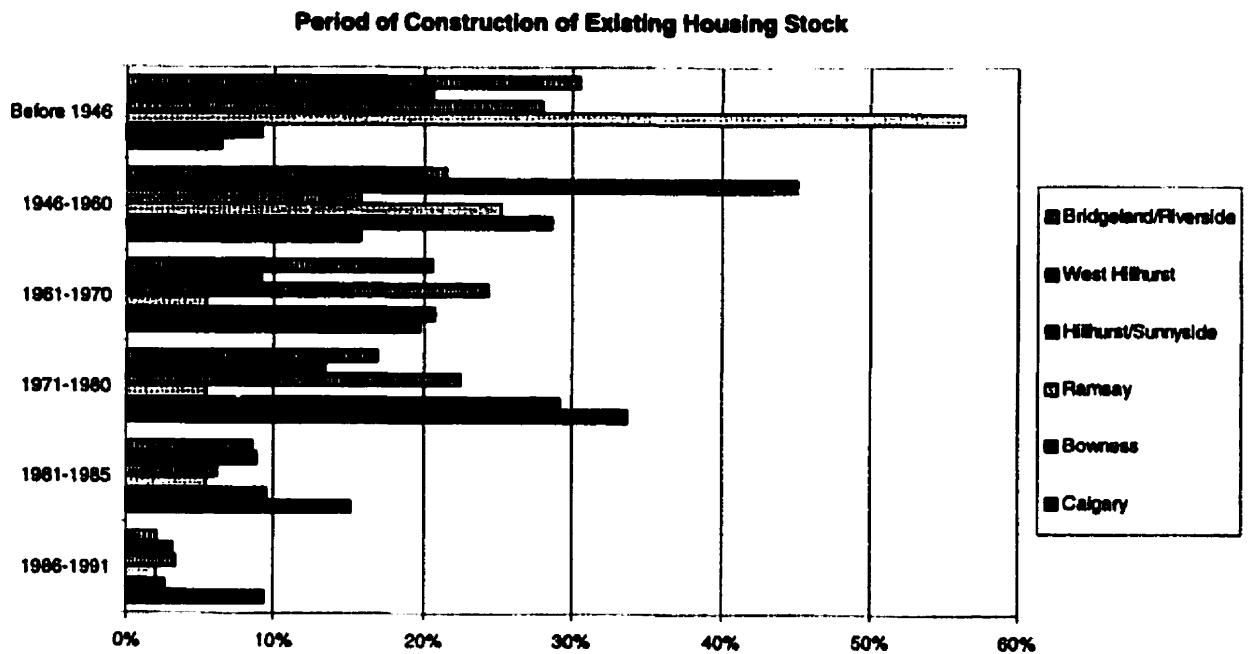
<sup>2</sup>Government of Canada, Human Resources Development Canada, 1996.

<sup>3</sup>Government of Canada, Federal Census, 1991.

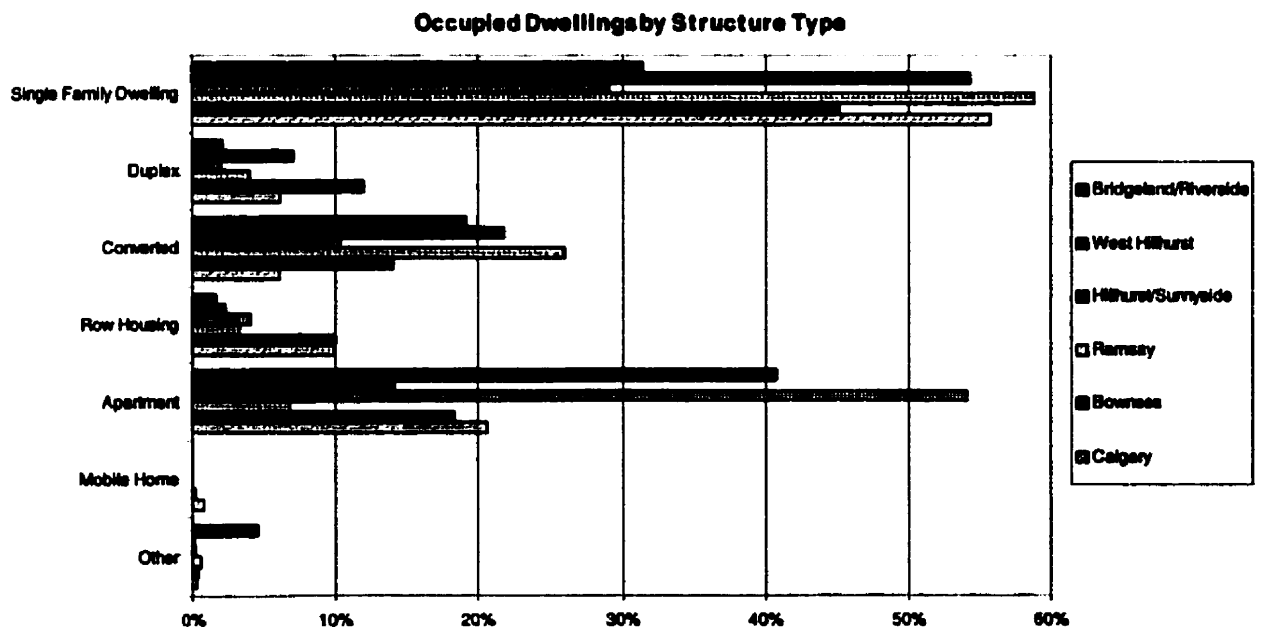
<sup>4</sup>City of Calgary, Special Needs Tax Unit, 1997.

## APPENDIX IV

### EXISTING HOUSING STOCK



Source: Statistics Canada (1991)



Source: City of Calgary Civic Census (1997)

## **APPENDIX V**

# **NINE PERFORMANCE CHARACTERISTICS AND PROPOSITIONS ABOUT SUSTAINABLE RESIDENTIAL COMMUNITY DESIGN**

**1. Community (Design): Social fabric consciousness, developmental spirits and concrete objectives, stewardship roles defined and evolved, high group sensitivity to residents' satisfactions.**

**\* Attend to community design in concert with land use and housing design.**

**2. Land and Community Space: trade-offs from private space expectations to community spaces in earliest planning phases; early attention to urban design-spatial composition to achieve agreeable community spaces, ground linkages and networks.**

**\* Develop community management commitments - beginning with user-participant planning and design at the initial stages (at least) of a project.**

**3. Housing and Other Built Forms: Land use allocation/ plan-making and design of housing forms proceed in concert with each other.**

**\* Use building materials that optimize ecological soundness or "returns" (design, production, transport and construction); includes programs and considerations for achieving useful life, reuse and retrofit of existing buildings, and reuse or selective disposals in post-demolition or post-construction contexts.**

**4. Resources Conservation: in all aspects of design and housing technologies, procedures and routines for household practices, and community education programming.**

**\* Minimize energy consumption; use renewable energy. Minimize water consumption. Minimize waste.**

**5. Waste Management: Disposal, recycling and reuse programs, and local organization.**

**\* Minimize and control waste (from households and businesses, and from production processes of enterprises, including environment and landscape cleanups, and regulation of waste disposal and pollution discharges on the community site) and establish local reuse and recycling programmes and facilities.**

**6. Transportation: "calm" traffic systems and street sizing, emphasis on pleasurable street environments**

and person mobility.

- \* Minimize both the on-site generation of vehicle trips and the nefarious impacts of transport on community life and environment.

**7. Landscaping and Urban Greening:** Fit built forms and open space preservation to the land ecology of the site, "Greening" (plantations) as a gesture to global environmental redress.

- \* Land uses and built-forms are planned, designed, and developed integrally such as to support and/ or regenerate vegetation and to nurture wildlife.

**8. Community-based Food Production:**

- \* Provide area for private gardens, allotments, greenhouse production units, and/ or contractual associations for community purchases from nearby farm producers.

**9. Protecting Soil, Air and Underground Water:** grey water recycling and irrigation, restoration of topsoil, sensitivities to cut/ fill operations and replacements of plant materials.

- \* Discharges to be of sufficient quality not to impair beneficial uses, inhibit indigenous biota or produce adverse impacts.

**Source:** Perks, William T. Van Vliet, David R. "Assessment of Built Projects for Sustainable Communities" Faculty of Environmental Design, The University of Calgary, 1993

# LIST OF FIGURES

## 1. Boom

*Source: Calgary Herald, October 5, 1998*

## 2. Explosion

*Source: Calgary Herald, October 5, 1998*

## 3. Study Area Location

*Source: Planning & Building Department, the City of Calgary. "Bow Valley Centre Redevelopment Concept Plan, Planning Design Competition Information Package", October 1998*

## 4. Airphoto 1998

*Source: University of Calgary Library*

## 5. The Pond at Bowness Park

*Source: David Berezowski, "Where Calgary/ November, December 1998", 45*

## 6. General Land Use

*Source: Planning & Building Department, the City of Calgary. "Bow Valley Centre Redevelopment Concept Plan, Planning Design Competition Information Package", October 1998*

## 7. Bridgeland-Riverside Land Form and Grid

*Source: Planning & Building Department, the City of Calgary. "Bow Valley Centre Redevelopment Concept Plan, Planning Design Competition Information Package", October 1998*

## 8. Airphoto 1924

*Source: University of Calgary Library*

## 9. Airphoto 1949

*Source: University of Calgary Library*

## 10. Airphoto 1966

*Source: University of Calgary Library*

**11. Airphoto 1982**

**Source:** *University of Calgary Library*

**12. Airphoto 1991**

**Source:** *University of Calgary Library*

**13. The Old Calgary General Hospital**

**Source:** *Calgary Herald October 5, 1998*

**14. City's Major Pedestrian-oriented Commercial Streets**

**Source:** *"Where Calgary/ November, December 1998", 76*

**15. Escarpment 1**

**Source:** *Joanne Dorais*

**16. LRT Station 1**

**Source:** *Joanne Dorais*

**17. City's Major Roads**

**Source:** *"Where Calgary/ November, December 1998", 73*

**18. LRT Route**

**Source:** *"Where Calgary/ November, December 1998", 75*

**19. LRT Station 2**

**Source:** *Joanne Dorais*

**20. City's Green Way**

**Source:** *"Where Calgary/ November, December 1998", 75*

**21. House 1**

**Source:** *Jan Triska*

**22. House 2**

**Source:** *Jan Triska*

**23. Down Town View 1**

*Source: Peng Peng*

**24. Down Town View 2**

*Source: Peng Peng*

**25. The Hospital Building 1**

*Source: Joanne Dorais*

**26. Pathway**

*Source: Calgary Parks & Recreation*

**27. Park**

*Source: Joanne Dorais*

**28. The Laundry Building**

*Source: Jan Triska*

**29. 1 Ave. NE**

*Source: Jan Triska*

**30. Medical Office Building**

*Source: Peng Peng*

**31. The Hospital Building 2**

*Source: Joanne Dorais*

**32. The Sentry Federal Building**

*Source: Andres Duany and Elizabeth Plater-Zyberk. "Towns and Town-making Principles" 76*

**33. LRT Station 3**

*Source: Joanne Dorais*

**34. Nantucket, Massachusetts, Main Street**

*Source: Roger Trancik. "Finding Lost Space" 45*



**35. Corner**

**Source:** *Carol-Ann Beswick, Pat Churchman, Silvana Costa & Pat Marples*

**36. Visby, Sweden, Main Street**

**Source:** *Roger Trancik. "Finding Lost Space" 73*

**37. Tullamore in Kensington**

**Source:** *Simon Burroughs, "Where Calgary/ November December 1998" 16*

**38. Bench in Park**

**Source:** *Carol-Ann Beswick, Pat Churchman, Silvana Costa & Pat Marples*

**39. Zion and Breen, Paley Park, New York, New York 1967**

**Source:** *Roger Trancik. "Finding Lost Space" 85*

**40. Oliver Twist**

**Source:** *Trudie Lee. "Where Calgary/ November December 1998" 18*

# **BIBLIOGRAPHY**

\* Cullen, Gordon. "Townscape", London: The Architectural Press, 1961

\* Van Vliet, David R. "Urban Design Analysis of Innovative Residential Communities in Scandinavian Countries and Transference to Canadian Urban Planning", Calgary: Faculty of Environmental Design, the University of Calgary, 1990

\* Perks, William T. Van Vliet, David R. "Assessment of Built Projects for Sustainable Communities", Calgary: Faculty of Environmental Design, the University of Calgary, 1993

\* Wilton-Clark, Andrea B. "Redesign Suburbia", Calgary: Faculty of Environmental Design, the University of Calgary, 1996

\* Hedman, Richard & Jaszewski, Andrew. "Fundamentals of Urban Design", the American Planning Association, 1984

\* Jacobs, Jane. "The Death and Life of Great American Cities", New York: Random House, 1961

\* Lynch, Kevin. "The Image of the City", Cambridge, Massachusetts: MIT Press, 1969

\* Spreiregen, Paul. "Urban Design: The Architecture of Towns and cities", New York: McGraw-Hill Co., 1965

**\* Howard, Ebenezer. "Garden Cities of Tomorrow", London: Faber and Faber, 1951**

**\* Krier, Rob. "Urban Space", New York: Rizzoli International Publications, Inc., 1979**

**\* Rasmussen, Steen Eiler. " Towns and Buildings", Cambridge, Massachusetts: MIT Press, 1969**

**\* Trancik, Roger. "Finding Lost Space, Theories of Urban Design", New York: Van Nostrand Reinhold Company, 1986**

**\* Potopsingh, Lisa. "The Subliminal Passage: Landscape as a Constructing Force in Urban Space and Habitat Design", Calgary: Faculty of Environmental Design, the University of Calgary, 1998**

**\* Duany, Andres. And Plater-Zyberk, Elizabeth. "Towns and Town-making Principles", New York: Harvard University Graduate School of Design. 1991**