

'aging in place'

an architectural interpretation

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AGING IN PLACE

AN ARCHITECTURAL INTERPRETATION

by

Reto Steiner

A professional paper submitted in partial fulfillment
of the requirements for the degree

of

BACHELOR OF ARCHITECTURE

Approved:

_____
Advisor

_____
Director, School of Architecture

Montana State University
Bozeman, Montana

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aging in place

'an architectural interpretation'

calgary alberta

Dedicated to my parents
and all my friends
who have guided me through some trying moments

A special thanks to Niza Shaw who has
shown that growing old can be
an inspirational experience

preface

Just a line to say I'm living
that I'm not among the dead
though I'm getting more forgetful
and mixed up in the head.

For sometimes I can't remember
when I stand at the foot of the stair
if I must go up for something
or I've just come down from there.

And before the frig, so often
my poor mind is filled with doubt
have I just put food away, or
have I come to take it out.

And there's times when it's dark outside
with my night cap on my head
I don't know if I'm retiring
or just getting out of bed.

So if it's my turn to write you
there's no use in getting sore
I may think I have written
and don't want to be a bore.

So remember ... I do love you
and wish you were here
but now, it's nearly mail time
so I must say, "goodbye dear."

There I stood beside the mailbox
with a face so very red
instead of mailing you my letter
I have opened it instead.

- Niza Shaw -
(At 99 she is one of
Bozeman's oldest residents.)

In an effort to dispel the images we presently hold of the elderly an attempt has been made to develop a new, and more appealing image of the aging adult. Present conceptions of the aged are inappropriate and indicate a misinformed general public when it comes to characterizing the elderly. It therefore must be brought to the reader's attention that the aged are really no different than you or I. It is for this reason that a series of short poems written by myself and others has been developed throughout the book. The intent of the poems is to stimulate a broader conception of the definitions we presently hold of the terms elderly, aged, aging adult, old people, etc. and bring them into a new context.

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AN IMAGE

One's own capacity

It was an unusually simple piano solo that
still remained in his memory
as he moved through the freshly fallen snow,
his skis cutting a delicate and seemingly endless
set of parallel lines along the frozen surface
of the lake.

The storm had been vital to the new character of the landscape,
the same landscape which was now the guest to a crisp clear morning.

The snow had fallen most of the night
and the lake's edge was no longer a containing force,
the usual boundaries were indistinguishable
replaced instead by a continuous sheet of white linen,
gently laid over the landform,
concealing any relevance to past images.

The new image held a purity barely able to tolerate
the intrusive line of human thought
which contoured its smooth surface,
thoughts which came with such clarity as to challenge
the sharp, cold air that accompanied each stride.

As the snow folded along his skis
he marked yet another portion of his past
while the vista ahead held a knowing but
untold future -- waiting;
waiting to become a part of the carefully constructed
path behind him.

Despite the many years of his past
his age held little relevance at this moment,
he felt unrestricted by society's misconceptions
of his capacity;
his only barriers here were the stringent elements of
nature,
and the ability to maintain the simple clarity
of a piano solo still tracing his memory.



A NEED

It is apparent when looking at the available statistics that an unforeseen growth in the age group 50 and over is expected. These statistics indicate that those over 65 are growing 3-5 times faster than the national average, and those 75 and over are growing at 7.5 times the average.[1] With life expectancies increasing and pressures to reduce the present retirement age, the needs of the aged will only continue to demand greater attention.

Realizing these changing conditions and the present shortage in existing facilities to accommodate the aged has resulted in the impetus for this study. As the demand for new housing and support facilities continues to grow, it will become the role of the private sector to study the development programs appropriate to the needs of the elderly. With this potential in hand, the emphasis becomes that of developing a model facility, a facility that will establish basic standards for future developments of a similar nature.

In an attempt to establish these standards the concentration of this study will be placed on the concept "aging in place." The major premise behind the concept deals with resolving the problems of declining health conditions and the social displacement commonly associated with aging and develop a community which addresses these issues.

The study will include research into the social, psychological and physiological needs of the elderly. From this research it is hoped to

[1] Source: U. S. Department of Commerce, Bureau of the Census, General Population Characteristics, 1972.

develop a type of formula which would firstly translate itself into a program and secondly would create the necessary information to develop an architectural solution. It is this architectural solution which becomes the ultimate goal of the study, substantiating the research and lending meaning to the study of "aging in place."

AGING IN PLACE – 'A DEFINITION'

As a relatively new design philosophy in architecture "aging in place" has taken on considerable relevance in solving the problems of elderly housing. It is a concept which addresses the issues most pertinent to the aged. Given the changing physiological conditions associated with aging, the independence and subsequent psychological security of the individual are threatened. Much of this insecurity stems from inappropriate housing which does not allow for the changing physical conditions of aging. This in turn causes the inability of an otherwise normal person to perform their daily tasks. In search of solutions few alternatives are available and many individuals are left with the choice of nursing homes as their only means of support. The mere threat of having to move from what was considered a stable and secure environment into new and unfamiliar surroundings can be very traumatic. It can quite literally cut 5-7 years off a person's life span when forced to move.

Although other factors do play a role in how the aged function within our society (as will be stated later), the provision for a stable environment becomes essential. By providing an environment that considers the special needs of the aged we increase their potential for maintaining independence and provide a sense of security not otherwise present.

Taking this sense of permanence one step further we can begin to provide the essential services within the housing development itself. At some point when the individual is no longer able to fully take care of himself (either temporarily due to some illness or permanently), the ability to assist that person within the home decreases the potential

need for relocation. Providing these services (medical, cleaning, hygiene, care, laundry, etc.) within the home environment insures the particular individual that no attempts will be made to move them into unfamiliar and unnecessary facilities.

Thus the development of the concept "aging in place." In providing for the basic needs of the aged, an effort is made to reduce the potential of a person's relocation. This in turn increases one's sense of security and belonging within his/her living environment. It contributes to their moral strength and decreases the disproportionately high suicide rate among the elderly. It provides a place for greater social interaction among peers and a link with the rest of the community. It provides for a transition into new roles and increases the potential for personal growth.



"Then Almitra spoke, saying, we would ask now of Death.

And he said:

You would know the secret of death. But how shall you find it unless you seek it in the heart of life?

The owl whose night-bound eyes are blind unto the day cannot unveil the mystery of light.

If you would indeed behold the spirit of death, open your heart wide unto the body of life.

For life and death are one, even as the river and sea are one."[a]

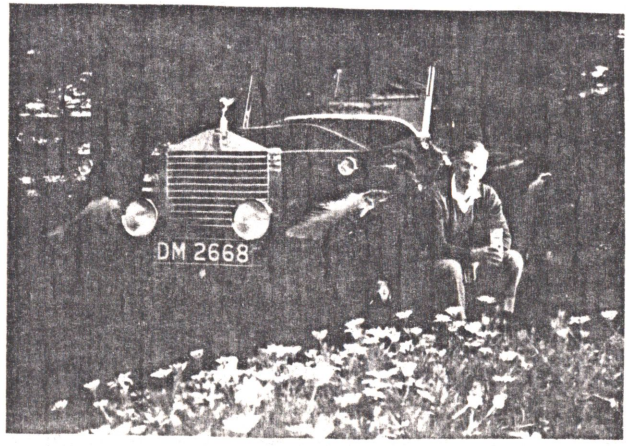
- K. Gibran -

THE USER

The eventual goals, from an architectural viewpoint, are to provide a permanent living environment for the aged. This establishes the need for a transition from major role exits (work, and marriage to widowhood) into new roles. The potential range of tenants can be considered very broad and, therefore, special attention should be given in defining the anticipated user.

General Considerations

With life expectancy increasing at such amazing rates (6 month increase in the past year) and the general growth of the aging population, the potential market is increasing at substantial rates. Rates which present and planned facilities will not be able to keep up with.



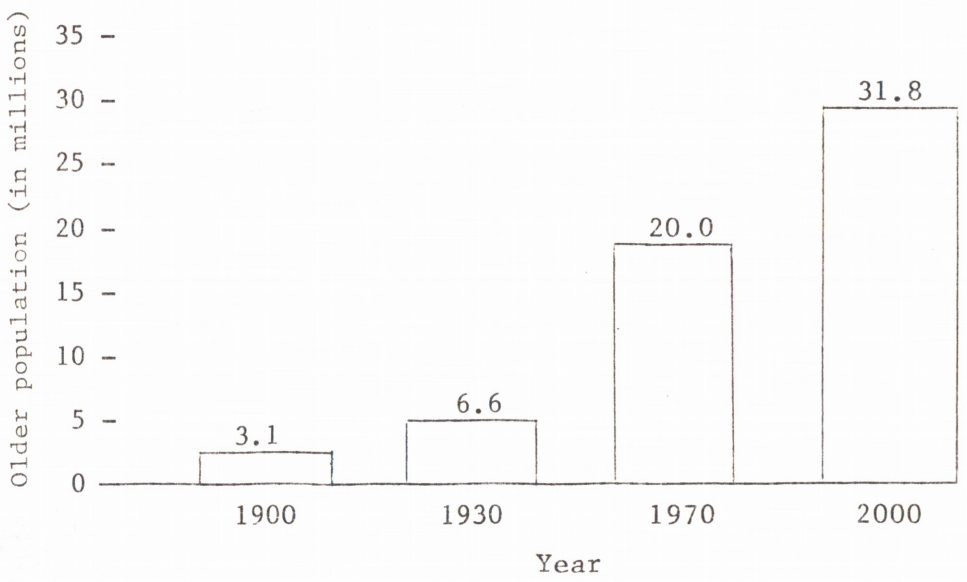
a. K. Gibran, The Prophet. New York: A. A. Knopf, 1977, p. 80.

Table 1. Life expectancy at birth in the United States, 1900-1976

Year	Life expectancy (in years)		
	Total population	Male population	Female population
1900	47.3	46.3	48.3
1910	50.0	48.4	51.8
1920	54.1	53.6	54.6
1930	59.7	58.1	61.6
1940	62.9	60.8	65.2
1950	68.2	65.6	71.1
1960	69.7	66.6	73.1
1970	70.9	67.1	74.8
1976	72.8	69.0	76.7
1983	74.3	70.3	78.3

SOURCE: U.S. Bureau of the Census, Statistical Abstract of the United States: 1978, U.S. Government Printing Office, Washington, D.C., 1978, p. 69; and National Center for Health Statistics, Vital Statistics of the United States, vol. 2, U.S. Government Printing Office, Washington, D.C. 1973.

Table 2. The growth of the older population in the twentieth century.



SOURCE: National Clearing House on Aging, Facts About Older Americans, 1978, U.S. Government Printing Office, Washington, D.C., 1979.

Given the activity level of this age group there seems to be little that the elderly aren't capable of doing with some degree of competence or another. Statistics would indicate that only 2% of the aged are considered dependent and unable to perform normal daily tasks without assistance.

One survey has shown that 4 out of 5 older people consider themselves active in one fashion or another. In more definitive terms:

- 33% of those over 65 consider themselves very active.
- 51% of those over 65 consider themselves fairly active.

(Source: Epstein, D., Retirement Housing in Urban Neighborhoods, U. of Winnepeg, 1976.)

It can be assumed that those under the age of 65 are at least equally as active and most likely more active. With this in mind the type of support facilities provided are unlimited.

In terms of the cross section of this age group who are either single or married, the following breakdown applies:

	Men	Women	
Single	25%	51%	(over 65)
Married	75%	59%	

As well, there are 130 women for every 100 men in the over 65 age group. It can also be assumed that due to the age group we are dealing with no children will be considered.



THE TENANT

The project itself caters to the upper income class and thus does become restricted by dictating the socio-economic class expected. As the Calgary area is quite affluent (see Table 4, user group), no problems are envisioned. It can also be noted that those coming from a higher socio-economic background normally have a greater physical capacity, are more mobile and socially more active. This establishes a potentially greater social response and interaction among residents of the project. However, regardless of this increased capacity to function within today's social structure, it cannot be ignored that,

> "Even people in the upper income groups, in robust health, may find the orbit of their lives uncomfortably narrowing...."[2]

With this in mind, there are very few restrictions as to the potential tenant. Health restrictions will be limited only to those needing constant medical care. This represents a small portion of the potential users and is not considered a problem. With the "complete care facility" and the special design considerations in the individual units (outlined in the program), the project should be able to facilitate a very broad range of tenants with varying degrees of physical capacities. Despite the broad range of potential disabilities, the primary objective will be to maintain the individual's independence.

No restrictions on whether the person is retired or still working will be established. Instead, there would be a preference to establish

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[2] Lewis Mumfred, "For Older People - Not Segregation but Integration," Architectural Record, May, 1956, p. 191.

a good mix of both working and retired tenants, as well as younger, old tenants (in their 50's). This provides a better potential for interaction both in the project and with the community, and provides for a better image of the development.

The younger resident would provide more incentive for the older tenant to stay active; role models if you will, and the young residents would have a better chance of establishing themselves if they enter the area at an earlier stage. It would provide a better way of moving into new roles as some of these roles would already be established when old ones are lost. New social contacts, a sense of permanence, and the potential for new activities would all contribute to a better morale and sense of security. As the individual is forced out of existing social roles, new roles would already have been established.

> "...the transition from middle aged maturity to old age is a long process, and if we meet it imaginatively at the earlier period, we can make the transition without a jar..."[3]



In order to develop a clearer picture of the potential user, a number of character sketches depicting individuals and couples have been selected. These sketches are meant to be descriptions of people who would be envisioned as tenants in the proposed project.

Mrs. J.

Mrs. J's husband died several years ago and she has since been living alone in the large family house. At age 70 she is still competent to care for herself, but maintaining the house has become

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[3] Lewis Mumfred, "For Older People - Not Segregation but Integration," Architectural Record, May, 1956, p. 192.



impossible. Of a Jewish background she is still active in the religious community. Her husband left her a substantial inheritance and she has no financial worries.

She spends most of her time at home or within walking distance of home. She no longer drives, which makes errands and shopping a difficult task. She enjoys crafts, going for walks and shopping. Finding a place where conveniences were improved without sacrificing her independence would appeal to her.

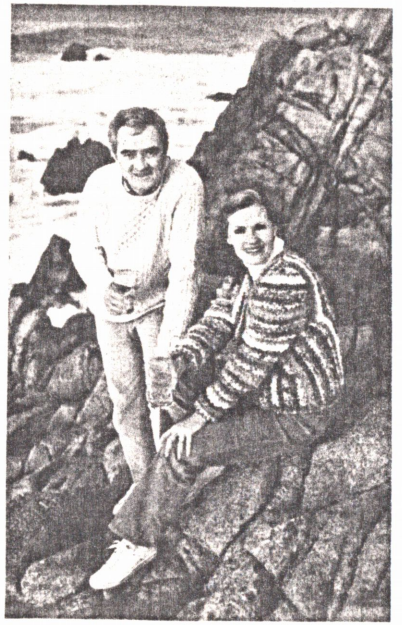
Mr. and Mrs. R.

Mr. and Mrs. R., both in their early 50's, live in a high-income neighborhood. Mr. R. is planning on retiring in the next 5 years. A dentist by profession, he could carry on a limited practice after retirement and wishes to do so.

Their five children have all moved out and they're not sure whether they should renovate their existing home or find something easier to maintain. Both are active in a private recreational club and belong to the Calgary Golf and Country Club. They enjoy curling, cross-country skiing, tennis, golfing and most outdoor activities. They both consider their physical health important to maintaining their mental health and spend a portion of the winter in Maui.

Not wanting to move away from Calgary in order to be close to family and friends, their decision to move would depend on the potential alternatives to their present home, and they would be quite willing to move, given the right circumstances.

Mr. and Mrs. T.



Now in their late 50's, Mr. and Mrs. T. own a large home in an exclusive Calgary neighborhood fronting one of Calgary's finest golf courses. Although reluctant to give up the house, the 4 children no longer live at home and the house has just become too cumbersome and difficult to maintain. Mr. T. is a prominent energy consultant who enjoys most sports, theatre and is an active member of the Shriners.

Mrs. T. is worried about being alone in such a large house and would prefer a smaller, more comfortable environment. Although not as active as her husband, she still has full mobility and enjoys the arts and volunteer work.

Both would prefer to give up the house and move into a place where maintenance and security are taken care of and they won't have to give up any of the freedom they presently enjoy.

Mr. and Mrs. S.

Mr. and Mrs. S. own a large ranch to the west of Calgary. Now in their 60's, they would like to move into town where the necessary services are closer at hand. Their son has for the most part taken over the operation of the ranch and leaves them free to move. Not wanting to make more than this one move, they would prefer something where they could live without being forced to move if their present health and physical capacities deteriorate. At present they are both still in good health, but they realize their age and the increasing potential for ailments could restrict their activity levels. Given a choice, they would prefer to live in a development where the concerns of the aged are taken into account.

Calgary Area

Since the project is situated in the Calgary area, it becomes appropriate to examine the character of Calgary's older population. With 80% of Canada's oil and gas company headquarters situated in Calgary a large percentage of the population is involved in the energy field. As a result, "Calgary has become home to the white collar worker, the executive, the professional and the entrepreneur." With one of Canada's highest per capita disposable incomes the affluence of the general population is quite high. Thus the choice of a development which accommodates the upper and upper middle income class.

The present population of Calgary is 600,000, with a growth rate of about 3%. The distribution indicates that the user group (age 50 and over) makes up 18% of the population and compares with a national average of 21%.

Table 3. Population distribution 1976 census (% of total)

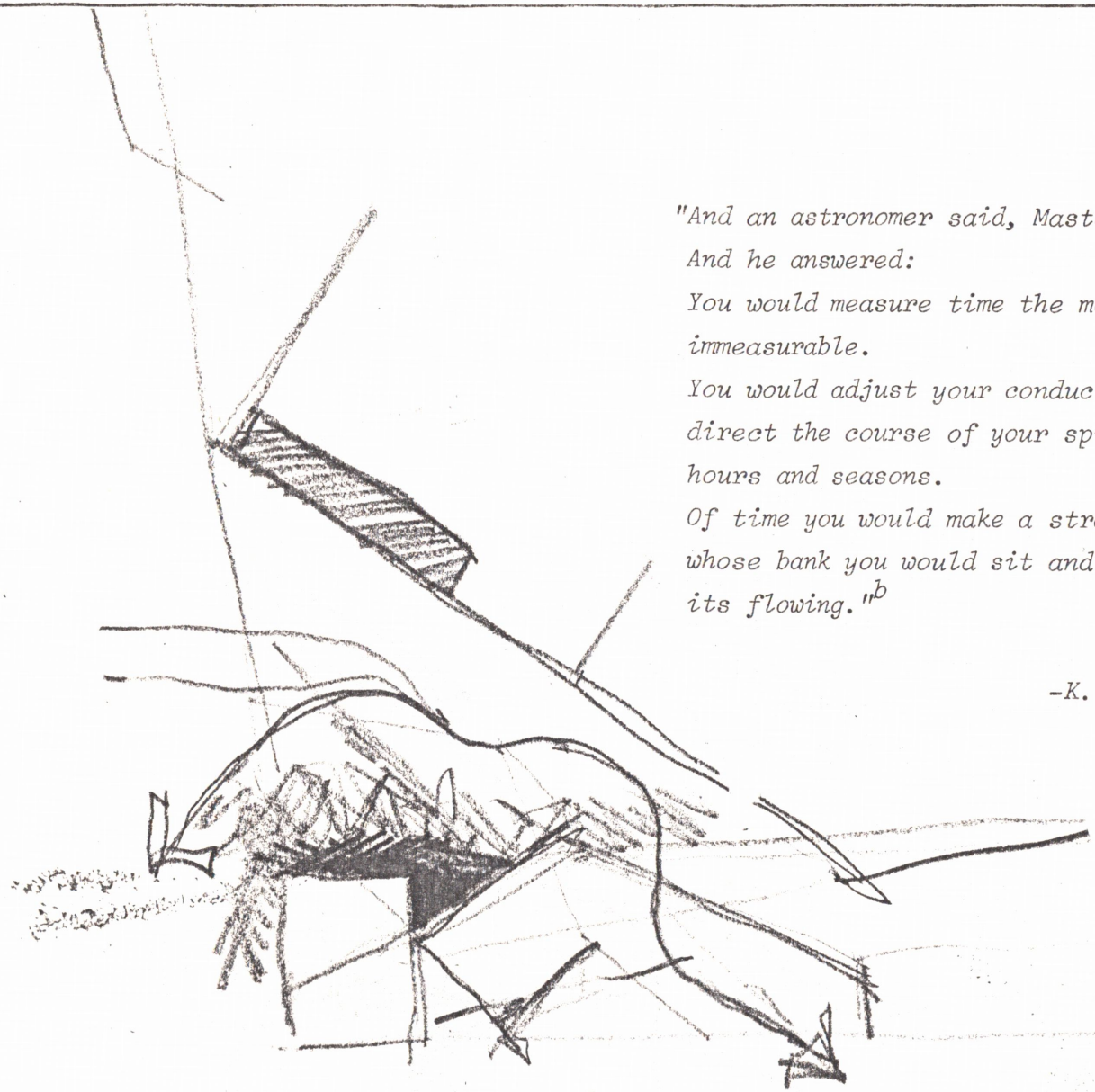
Calgary			Canada		
Age group	Male	Female	Age group	Male	Female
0 - 4	8.0	7.6	0 - 4	7.8	7.3
5 - 9	8.5	8.2	5 - 9	8.4	8.0
10 - 14	9.5	9.2	10 - 14	10.2	9.6
15 - 19	10.2	10.1	15 - 19	10.4	10.0
20 - 24	11.3	11.1	20 - 24	9.3	9.3
25 - 34	18.4	17.7	25 - 34	15.9	15.6
35 - 44	12.0	11.5	35 - 44	11.5	11.1
45 - 54	10.2	10.2	45 - 54	10.7	10.8
55 - 64	6.3	7.0	55 - 64	8.1	8.6
65 - 69	2.1	2.5	65 - 69	3.0	3.3
70+	3.5	4.9	70+	4.7	6.4

SOURCE: Calgary in Fact: The City of Calgary Dept. of Business Development, 1979.

Based on this population of 600,000 the following statistics can be developed.

Table 4. Potential market population

User group	% of total	Total number
Ages 50-64	16.8	100,800
Ages 65+	6.5	39,000
Upper income (aged 50 & over)	12.0	16,680
Upper middle income (aged 50 & over)	10.0	13,980
Potential market population	22.0	30,660 (a conservative estimate)



"And an astronomer said, Master, what of Time?
And he answered:
You would measure time the measureless and immeasurable.
You would adjust your conduct and even direct the course of your spirit according to hours and seasons.
Of time you would make a stream upon whose bank you would sit and watch its flowing."[b]

-K. Gibran-

A SOCIAL CONCERN

Since the industrial revolution we have seen a dramatic change in how society functions. The acceleration of all aspects of life has imposed increasing pressures on how we use our time. The introduction of the computer only threatens to increase those pressures. It becomes evident when studying the effects such changes have on society the aged become the ones most likely to be left behind.

> "The cultures of today tend to make elderly people an expendable item, which in most cases has rarely been done at the appropriate time....[4]

On a social level the three generation family is no longer the norm, urbanism has implied a new social structure and constant innovation and change are conditions of survival in such a competitive environment. Today any concern for the transition into a new role ignores the social implications that come with it. The concern here is the impact such fast paced changes have on the older person. Accompanying our technological advancements we have seen a restructuring of society's values which has resulted in the alienation of the aging adult.

With the increase of industrialization bureaucracy has also entered the work place and as a result retirement is mandatory, rather than by choice. Regardless of desire, need or ability, mandatory retirement at 65 is widespread and there is a movement by unions to lower this age. Statistics show that in 1948 50% of those over

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[4] "The Age of the Aging," Progressive Architecture, August 1981, p. 62.

[b] K. Gibran, The Prophet. New York, A. A. Knopf, 1977, p. 62.

sixty-five continued to work - compared with only 20% of this same age group working in today's society (Aging in a Changing Society, Z. S. Blau). This decline of the working force aged sixty-five and over indicates a large number of aged experiencing the trauma of a major role exit.

Unlike in earlier stages of life when role exits are followed by orderly transitions into new roles, retirement is considered the last stage with little opportunity for new role development provided. Faced with this situation the aging adult must attempt to develop a whole new social environment in order to maintain morale, vitality and self-esteem. An observation made by the writer E. B. White states that:

> "How should one adjust to age? In principle one shouldn't adjust. In fact one does. (Or I do.) When my head starts knocking because of my attempt to write, I quit writing instead of carrying on as I used to do when I was young. These are adjustments. But I gaze into the faces of our senior citizens...and they wear a sad look that disturbs me. I haven't agreed yet. Old age is a special problem for me because I've never been able to shed the mental image I have of myself - a lad of about nineteen."[5]

Given the prospect of developing a whole new social milieu is a difficult task for even the most competent, let alone someone in their later years.

Maintaining a person's social responsibilities becomes essential to retaining a sense of youthfulness. With today's social structure there is little potential for a proper transition into the later stages of life. This issue becomes even more acute when one considers "the

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[5] Z. S. Blau, Aging in a Changing Society, 2nd Ed. Franklin Watts (New York, 1981), p. 94.

fear of a living death" as the potential life span beyond the child rearing stage reaches 25 years or more.

Given this condition and realizing the social needs of the aging adult, provision for a suitable physical and subsequent social environment must be developed. In providing this physical environment the issue of age group concentration becomes relevant. Providing an environment solely for the aging improves the social structure and potential interaction, which has been shown to rely heavily on age, sex and class position. "...friendships are usually confined to people of the same generation and at a similar stage in life."[6]

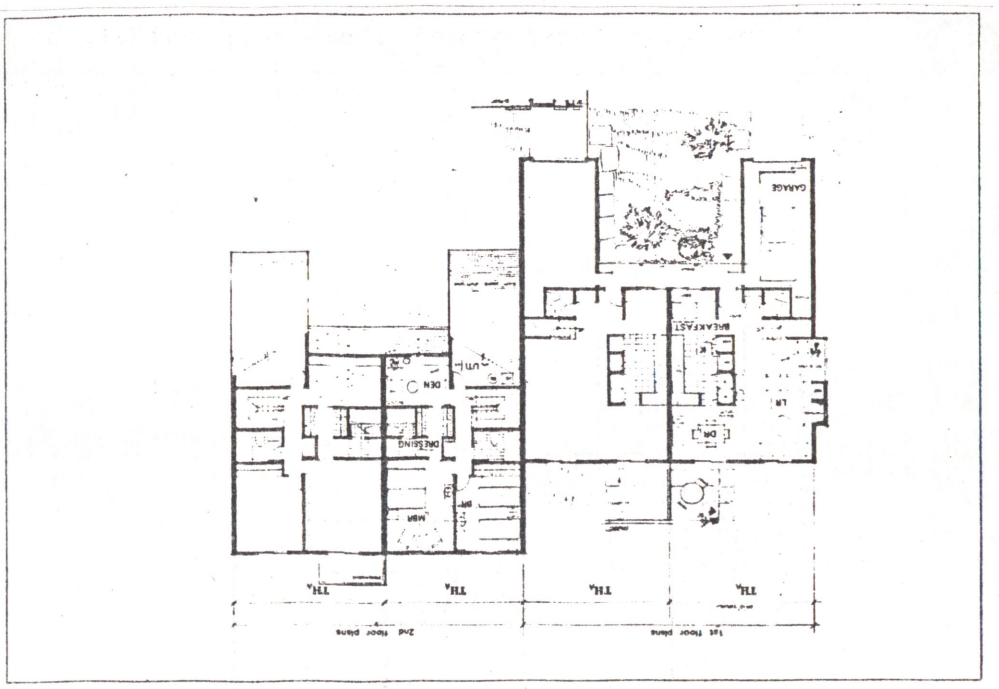
Therefore the issue of aging in place becomes appropriate when studying these social concerns. Providing an environment where someone can establish themselves without the threat of having to move because of decreasing health is the basic premise of this concept. By widening the range of potential tenants to include those who are still working and without children, we also increase their sense of place and belonging, since the person can expect to live within the same community for many years. This allows an environment which remains stable and provides the needed social structure when experiencing the various role exits associated with aging.

The overall physical constraints of an environment can also influence the social structure and in this case will indicate the potential for transition into the later stages of life. Improving this transition comes with proper management and a program which encourages the potential for developing an environment in which to maintain one's independence.

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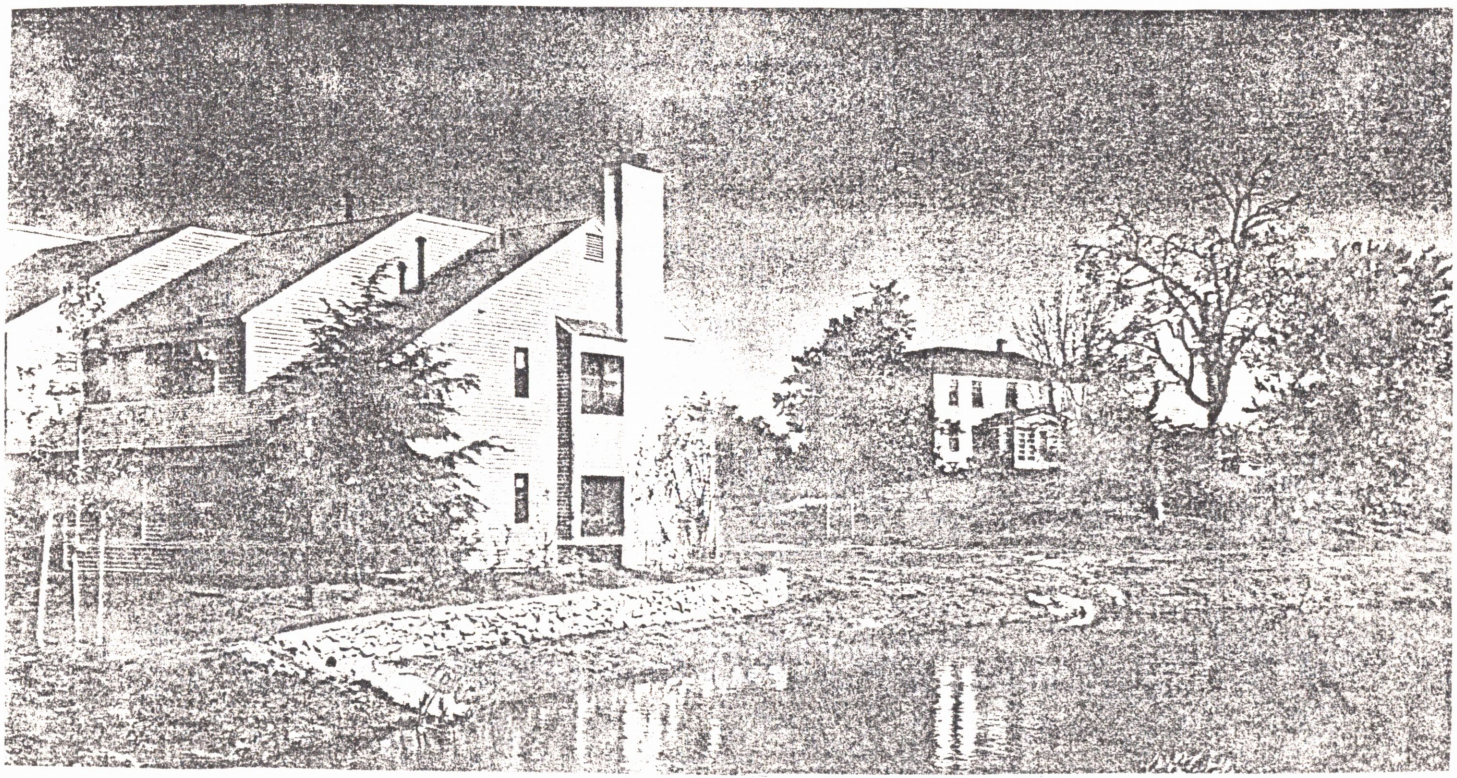
[6] Ibid, p. 65.

In an attempt to illustrate some of the approaches taken for housing the elderly it has become apparent that very few deal with the notion of aging in place. The case studies examined here do give us some insight into the types of elderly housing available. However, the studies do not necessarily parallel the efforts of this project in providing a permanent living environment for the aged. For this reason it becomes difficult to draw any strong conclusions from the various case studies presented; nonetheless, they are of some illustrative value.



Case One

Project:	Concord Green Apartments
Location:	West Concord, Massachusetts
Architect:	Huygens and Tappé, Inc.
Site area:	25.3 acres
Number of units:	220 (range 939-1,425 ft^2)



Positive aspects:

° Utilizes a park type setting by introducing three artificial lakes.

° Caters to the high income who no longer have children.

° Has developed some recreational facilities on the site.

° Has created open space courtyards through the clustering of buildings.

° Maintained a low profile with a residential atmosphere (9 units/ acre).

Negative aspects:

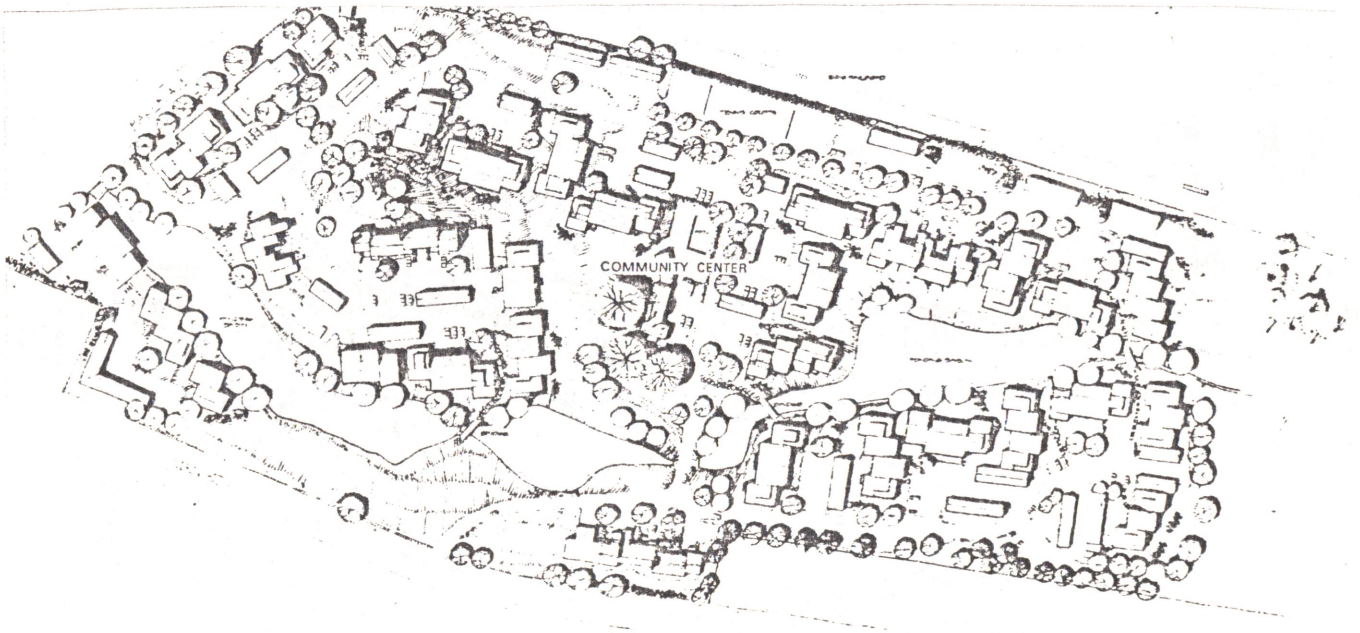
° No consideration for "aging in place."

° No concern for design of the elderly.

° There are no on-site medical facilities.

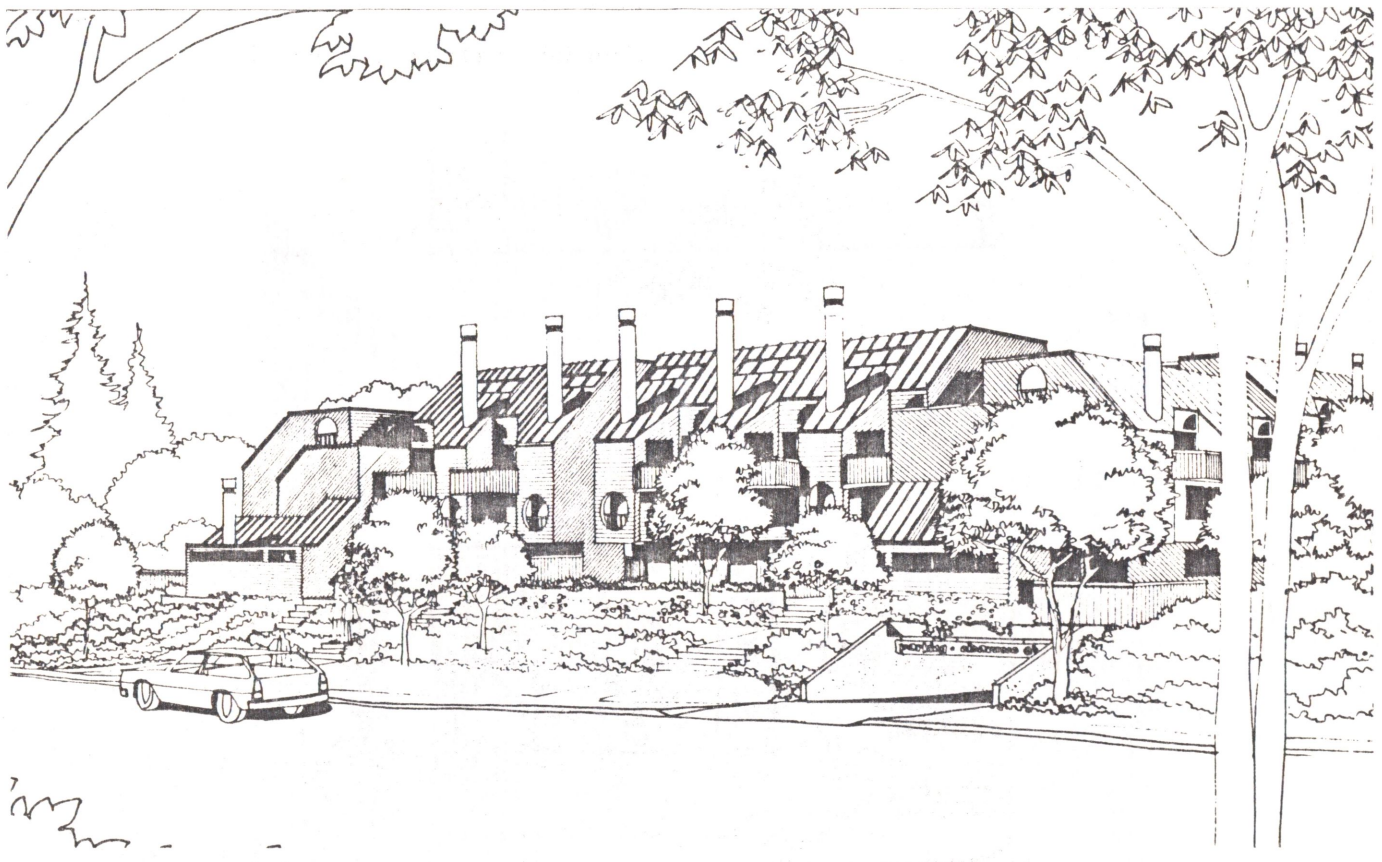
° Site is isolated.

° The potential for aging in place not present.



Case Two

Project:	The Fairways Condominiums
Location:	Coquitlam, British Columbia
Architect:	R. E. Hulbert and Partners
Site area:	2 acres
Number of units:	60 units



Positive aspects:

° A positive aesthetic treatment, considering the high density.

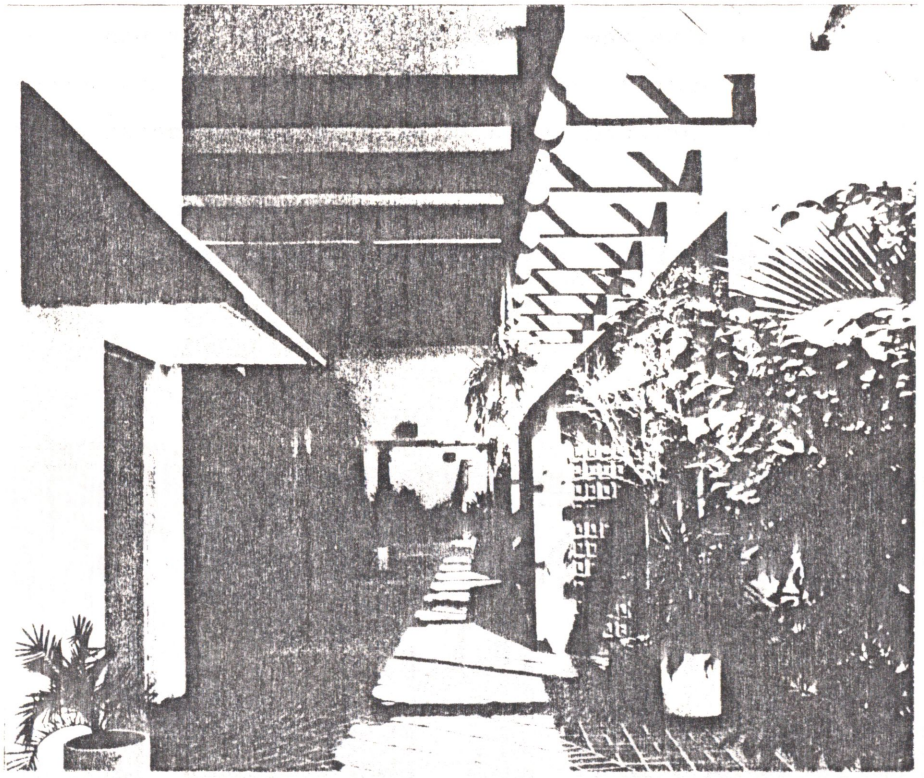
° Provides some interesting interior circulation spaces; brings the outdoors into the building.

° Site location is next to a golf course.

° Provides the potential for social interaction.

° Provides a sense of security within the complex.

This case was chosen not because it was an elderly housing project, but more as a study of what can be done in northern climates and how one can approach the sensitive issue of housing.



Case Three

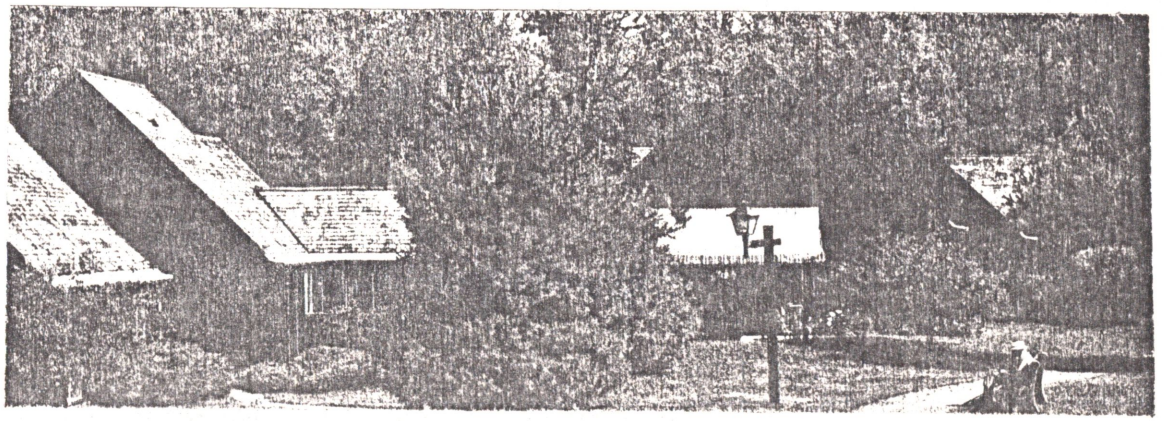
Project: Noble Horizons - a Continuum of Care
Location: Salisbury, Connecticut
Architect: Jeter, Cook and Jepson
Number of units: 32 cottages and 25 bed home

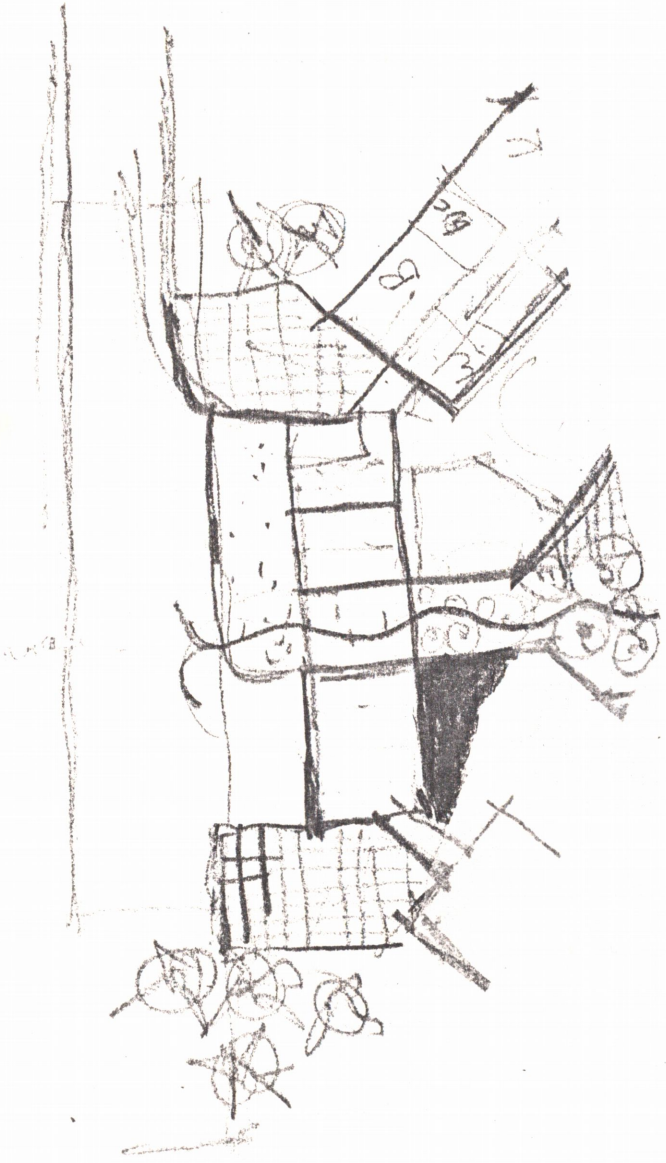
Positive aspects:

° Provision for three levels of care.
° Indicates none of the elements associated with institutional health care.
° A very positive setting.
° A community centre allows planned activities.
° Provides for both the well and infirm.
° Begins to establish a sense of permanence (i.e., aging in place).

Negative aspects:

° Poor site location - rural setting causing isolation.
° Very spread out for such a small project, making access to community centre difficult.
° Too small to support a large range of potential activities and services.





Then a mason came forth and said, Speak to us of Houses.

And he answered and said:

Build of your imaginings a bower in the wilderness ere you build a house within the city walls.

For even as you have home-comings in your twilight, so has the wanderer in you, the ever distant and alone.

Your house is your larger body.

It grows in the sun and sleeps in the stillness of the night; and it is not dreamless.

Does not your house dream? and dreaming leave the city for grove or hill-top?[C]

-K. Gibran-

THE PROGRAM

The end result of this project is to produce an environment providing a sense of comfort and security that enhances the meaning of home. Defining home can be a considerable task and really does not have the ability to account for individual preferences. Instead, the framework for establishing one's home needs to be constructed and the potential for a variety in living environments encouraged. This applies particularly to the elderly who have a more difficult time in adjusting to new environments. This type of human behavior cannot be ignored in the programming stage of the project. The programming will indicate how well the concept of aging in place will translate into an appropriate architectural solution to the stated problem.

From a sociological standpoint, provision for integration, or re-integration as may be the case, back into the social environment becomes of importance to the concept of aging in place. How this integration takes place can be accomplished on several social levels. Meeting the basic physiological needs that provide for ease in carrying out normal daily activities are often overlooked or viewed as insignificant. The success in providing for these basic needs lies in the attention paid to detailing. These details, to be outlined later, should take into account the reduced mobility and sensory perceptions and aid in the independence of the elderly. In providing this increased perception of independence, a sense of safety and security are provided.

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[c] K. Gibran, The Prophet. New York, A. A. Knopf, 1977, p. 31.

Increasing the competence of the individual, through proper architectural detailing, also contributes to the sense of belonging and social importance within the individual. Once this is accomplished it becomes relevant to examine the functioning of the individual within the project and the external community. Much of this relies on the project location and good site planning. It addresses the more public realm and reacts in response to the existing social structure which, as mentioned, presently isolates the aged from their surroundings. Management will play a major role in preventing this isolation, provided they have the proper facilities to work with. In laying out the potential activities and understanding how to implement them properly, an internal social structure can be developed. Provided interaction with the surrounding community is established within this structure, isolation and the issue of age segregation do not pose potential problems. This interaction can occur by bringing events into the project (guest speakers, small concerts, plays, etc.) and by providing adequate provision for access to outside events (sports, major concerts, education facilities, etc.).

On the highest level of human behavior we must address the value of status, esteem and self-actualization -- growth within the individual. Commonly ignored, they provide the necessary motivational factors to continue living. These needs become difficult to quantify, but they rely greatly on the success of filling the lower level needs already mentioned. This success also comes through the inherent qualities of the project, qualities that rely on the perceptual feeling of the project, what we consider the sixth sense.

With these various behavioral needs outlined one can develop a list of variables, when developing an elderly housing project, which

influence the programming process. Although relevant to any housing project, they are often overlooked in housing for the elderly and become increasingly important. It should be realized that "...there are few generic environments which require such total design reconsideration as designing for elderly people, from large scale to small.[7]

Listed here are some of the variables to be considered and addressed in the program development (consider this the formula mentioned earlier in the book).

1. Increase opportunities for individual choice
   - i) variety of living units
   - ii) variety in potential activities
2. Encourage personal independence
3. Reinforce their level of competence
4. Compensate for sensory and perception changes
5. Recognize the decrease in physical mobility
6. Provide proper health care facilities
7. Improve comprehension and orientation
   - i) proper site planning
   - ii) clear circulation patterns
   - iii) proper signage
8. Encourage social interaction
   - i) within the project
   - ii) within the community
9. Stimulate participation (management's role)
10. Provide individual privacy

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[7] "The Age of the Aging," Progressive Architecture, August 1981, p. 65.

11. Reduce distractions and conflicts
12. Provide for a safe and secure environment
13. Make services and activities accessible
    i) proximity
    ii) proper transportation services
14. Improve the public image of the elderly
15. Plan for growth of the individual
16. Provide for social transition
    i) support existing roles
    ii) provide potential for forming new roles
17. Develop a balanced age group
    i) younger working aged
    ii) retired
18. Try to limit any waiting list to a maximum of two years
19. Clarity in design
    i) familiarity and orientation
    ii) feeling of home
20. Awareness that knowledge leads to use which leads to well being
21. Awareness that the activities don't change, just the level of activity.

The program development also depends on several aspects which are inherent in the project objectives. As a model facility geared to improving the image of the older person, the decision has been made to develop the project based on the upper-income group as its client. This particular social class is seeking to improve on their existing living environment and their capacity to do so is not restricted by financial concerns. Commanding a wider range of choices through

financial independence allows the programmer to be more flexible, while at the same time, demanding stricter controls on the appropriate facilities which will enchance the living environment which they seek to improve upon. The issue of "aging in place" becomes an important factor to improving the attractiveness of such a proposal. Maintenance of an independent life style is a primary goal of the affluent and is realized through the development of facilities which accommodate the varying capabilities of the aged. Secondly, how these facilities structure themselves within their environment becomes important. In providing this potential for an improved living environment, it establishes a new standard of housing for the aging and attempts to negate the existing image of the older person as one who is no longer a part of today's social context.

As a footnote to this program development, it should be noted that many decisions were based on three factors. Firstly, a planning study provided several potential densities (see Appendix 1). Secondly, two planning commission reports made a number of recommendations which indicate the potential directions the project could take. The subsequent programming development has been based to some degree on these three studies and on the special needs of the user group involved.

HOUSING

The housing portion of this project will entail developing 265 units in 3 separate phases. The units will be a mix of semi-detached housing and low-rise apartment condominiums.

Low-Rise Apartment Condominiums - 105 units

20 studio units @ 600 ft^2

- ° living space — 250 ft^2
- ° bathroom (w/dressing area) — 100 ft^2
- ° dining — 150 ft^2
- ° kitchen — 100 ft^2

40 one bedroom units @ 800-1000 ft^2

- ° living space (w/fireplace) — 200-350 ft^2
- ° dining space — 150 ft^2
- ° kitchen — 100-150 ft^2
- ° 1½ baths — 160 ft^2
- ° bedroom — 180-250 ft^2
- ° storage — 50 ft^2

45 two bedroom units @ 1,000-1,200 ft^2

- ° living space (w/fireplace) — 200-350 ft^2
- ° dining space — 150 ft^2
- ° kitchen — 100-150 ft^2
- ° 1½ baths — 160 ft^2
- ° master bedroom — 180-250 ft^2
- ° bedroom — 150 ft^2
- ° laundry — 60 ft^2

Semi-Detached Housing - 160 units

90 one bedroom units @ 1000-1200 ft^2

° living spaces (w/fireplace)	250-400 ft^2
° dining spaces	125-175 ft^2
° kitchen	125-150 ft^2
° bedroom	180-250 ft^2
° 1½ baths	160 ft^2
° storage (laundry)	120 ft^2

60 two bedroom units @ 1200-1400 ft^2

° living spaces (w/fireplace)	200-300 ft^2
° dining spaces	125-175 ft^2
° kitchen	125-150 ft^2
° master bedroom	180-250 ft^2
° bedroom	150 ft^2
° 2 baths (w/sauna)	200 ft^2
° storage (laundry)	100 ft^2
° potential for a study in some units	

10 large two bedroom units @ 1500+ ft^2

° living spaces (w/fireplace)	250-350 ft^2
° dining spaces	125-175 ft^2
° kitchen	150 ft^2
° master bedroom	180-250 ft^2
° bedroom	150 ft^2
° 2 baths (w/sauna)	200 ft^2
° study(s)	ea 150 ft^2
° storage (laundry)	150 ft^2

The anticipated breakdown of the users is

Married couples	65%
Single women	23%
Single men	12%

This breakdown would indicate a total of 500 people or 15 people/acre. In relation to the unit density we get 10 units/acre which satisfies the constraints of the density study, allowing less than a 35% footprint coverage.

Parking Requirements

Due to the nature of the project and the number of persons who may rely on the private shuttle system provided, the code requirements of 2 stalls/unit will be reduced to 1½ stalls/unit. This translates into a provision for 350 on-site parking stalls.

CLUBHOUSE

It is anticipated that no more than 25% of the resident population will be using the facilities in any given day. Due to the nature of the project, the times of use will depend on the breakdown of the working resident vs. the retired resident. As would be expected the time schedules would be different for the two user types.

Membership would come automatically as a resident of the project, but some type of mandatory fee would be anticipated. The facilities will be developed around a club type atmosphere and will accommodate an average daily attendance of 175 people. The potential for bringing outside activities into the center does play a role in the selection of chosen facilities.

Outdoor Facilities

Tennis (2 courts) 120'x60'	14,400 ft^2
Lawn bowling (2 lanes) 120'x20'	2,400 ft^2
Horseshoes (2) 50'x10'	1,000 ft^2
Open terraces and lounge space	open
Pavilion (barbeque and party)	open
Total exterior space	17,800+ ft^2

Indoor Facilities

Private restaurant-cafe (w/patio)		2,500 ft^2
Sporting goods facility		600 ft^2
Lounge areas (atrium)		1,500 ft^2
Library (current reading material)		600 ft^2
Recreation room (pool, shuffleboard, cards, TV, etc.)		1,000 ft^2
Fitness facility - lockers, sauna, whirlpool, weight area		1,200 ft^2
Squash court (2) 18'-0" x 32'		1,200 ft^2
Meeting rooms	3 @ 400	1,200 ft^2
	1 @ 1000	1,000 ft^2
Crafts area		2,000 ft^2
Storage areas		700 ft^2
Washrooms		400 ft^2
		13,900 ft^2

Administration

General administration (reception area)	450 ft^2
Conference room	300 ft^2
Small conference room	150 ft^2
Administrator's office	200 ft^2
Assistant administrator's office	150 ft^2
Program director's office	150 ft^2
Assistant programmer	150 ft^2
Chaplain	150 ft^2
Accounting office (w/computer space)	300 ft^2
	2,000 ft^2

Guest Space

10 double occupancy rooms (12'x17')	2,000 ft^2

Maintenance and Support Services

Janitorial services (for the centre)	150 ft^2
Outdoor maintenance (storage, etc.)	500 ft^2
Service area	150 ft^2
Laundry/linen	300 ft^2
Maid service and housekeeping	300 ft^2
	1,400 ft^2
Mechanical/circulation (15%)	2,600 ft^2
Total interior space	21,900 ft^2

How this centre functions will strongly influence the success of the project as a whole.

Provision for a shuttle bus system that will originate at the community centre will be included as a programming concern. A variety of existing shuttle systems are servicing the Calgary area and can be made available, or the administrators could develop their own service program.

Along with the on-site facilities provided it should be kept in mind that access to a variety of amenities around the site should be provided. These include:

- walking and bike trails
- sailing areas
- cross-country skiing
- Heritage Park
- park areas
- major view corridors
- the lake

HEALTH CARE

In the area of health care the program has been broken into two sections, one dealing with on-site facilities for the residents and secondly what will be termed a "complete care facility." With government subsidizing such facilities $68-80/day the potential for such development is very possible and recommended.

Immediate Care

Reception area	250 ft^2
Nurses' station	400 ft^2
Head nurse's office	150 ft^2
Visiting doctor's office (examination room)	200 ft^2
Exam and research rooms	600 ft^2
Storage	100 ft^2
Physical and occupational therapy	800 ft^2
W.C. (2)	100 ft^2
	2,600 ft^2

Complete Care Facility

Lounge area(s)	1,000 ft^2
50-75 single occupancy rooms @ 200 ft^2 each	10,000-15,000 ft^2
Congregate eating area	1,500 ft^2
Kitchen	1,500 ft^2
Staff lounge (17 full-time)	200 ft^2
Maid and linen service	500 ft^2
Administration	1,000 ft^2
Mechanical/circulation	2,700 ft^2
	18,400 ft^2

In keeping with the concept of aging in place, this becomes an essential component of the proposal. Providing a facility which accommodates those who are no longer fully able to take care of themselves, they have an on-site option. The complete care facility is distinct from the nursing home in that no medication is prescribed and patients are allowed to come and go as they are able. An around-the-clock nurse is available and supervision of proper health care is provided. The staff's main function is to assist in the daily functions which the resident may have difficulty in performing. Location of this facility would have to be carefully examined to reduce the negative impact it may have on the rest of the development.

As a footnote to these health care functions, provision for visiting nurses will be accommodated and facilities provided for their use in the immediate care unit. This visitation would involve going to individual residences and would be provided by such organizations as the Royal Order of Victorian Nurses.

MANAGEMENT

As has been mentioned, management's role in the success of the project is critical. It therefore becomes important to identify just what services they provide to the residents.

It is envisioned that the residential units will be sold rather than rented and would therefore be handled by a real estate agent and not management. It is envisioned that some type of communication channel would have to be set up between the two parties in order to maintain the proper sale of individual units. Beyond this, management's role deals with the relevant support facilities, and operation of the clubhouse.

There support services include coordinating and maintaining the proper functioning of the following:

- maid and linen service (for those who wish it)
- maintaining the landscaping throughout the project
- providing a shuttle service for travel within the project and to areas within the surrounding community, able to handle the handicapped
- some type of security guard service
- maintain people who can service any problems within the units or surrounding area
- providing for snow removal on sidewalks and driveways (most likely contracted out)

As well as coordinating these support services, management would be expected to conduct the operation of the clubhouse facility. This would include:

- tenant participation and input into the functions
- running the restaurant/lounge
- maintaining and coordinating events and schedules for the athletic facilities. This could include tournaments, special events, sign-ups, etc.
- bringing in small concerts, lectures and seminars
- maintaining the library, obtaining newspapers, current periodicals and appropriate books
- providing an information centre for the residents
- insuring the proper functioning of the health care facilities.
- coordinating any health care services which would be provided within the individual residences (i.e. home nurse visitations, personal physician visits, etc.)
- maintaining a PBX phone system 24 hours
- monitoring and making any changes which may be indicated as demand dictates (i.e. some things may be more popular than others or unforeseen demands may occur and adjustments must therefore be made)

Management's function becomes that of catering to the residents and providing them with the services needed and can be done on a very personal and intimate level. For this reason establishing proper rapport with the residents through good public relations becomes essential.

SHOPPING CENTRE

In providing all the necessary facilities to accommodate the aging person, a proposal to use 5 acres of the 38 acre site for a commercial shopping area is planned. Consisting of anywhere from 8 to 15 individual shops, the potential advantages to the residents of the project is substantial. The proximity of such a centre could not be more appropriate and in providing some of the necessary daily services supports the need of local residents. Some of the anticipated shops would be:

1. bank
2. drugstore
3. grocery store
4. beauty-barber
5. bakery
6. dry cleaners
7. clothing boutique
8. specialty stores

This shopping centre is a private venture and would be developed and run by people outside of the project. Subject to certain guidelines issued by the developers of this project, a continuity between the housing project and shopping centre will be maintained.

DESIGN CONCERNS

From a programming standpoint the project must develop with the special needs of the aged in mind. Taking the inevitable decline in sensory perceptions into account contributes to a number of design concerns not normally considered. These sensory concerns include:

1. reduced visual capacity
2. tactile reliance
3. reduced hearing
4. olfactory cues
5. sixth sense, "the feeling"

Following is a list of compensatory design considerations. Although not complete, they will improve the flexibility and livability of the environment in which the aged must function.

A) visual compensation devices
   1) proper use of colors
   2) improving boundary perception
      i) avoid small level changes (minimum of 3 risers recommended)
      ii) make distinct changes in floor materials to avoid confusion and possible stumbling
   3) lighting should be properly located and illumination levels increased by as much as two times the normal level
   4) provide easy to read graphics
      i) raised lettering
      ii) high contrast
      iii) directories

iv) plenty of signage

v) reduce glare

5) provide for lower sightlines

B) acoustical compensation devices

1) avoid background noise

2) avoid large open spaces

3) avoid high noise areas (proper site planning)

C) tactical adjustments

1) provide a variety of wall textures and patterns

2) relief in signage

3) avoid sharp edges

D) olfactory adjustments

1) use the senses of taste and smell to provide positive psychological responses

2) prevent unpleasant smells from spreading

E) sixth sense

1) provide a sense of relaxation

i) personal spaces

ii) easy to read circulation

2) safety and security

i) fire alarm system

ii) sprinklers

iii) panic hardware

iv) well lit exterior spaces

v) security guards

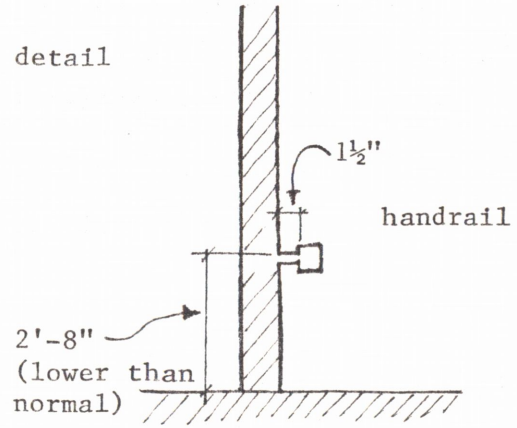
3) fenestration - bring the outside in

From a physical standpoint we are concerned with "barrier free" design. Since physical capacities can change, new needs are created

for individual tenants that must be added as time passes. These include:

1) adaptability - adjustable components
2) avoid thresholds or should not exceed 3/4" (bevelled)
3) wall outlets at 2'-3' high and out front of counters
4) limit stairs and where necessary use more landings and small solid risers
5) provide grab bars where appropriate and install them in useful positions
6) provide handrails where necessary
   - i) should be contrasting color
   - ii) rounded edges and sized for proper grip (1½"-2" dia.)
   - iii) 200 pound lateral capacity
   - iv) continuous and on both sides of a stairway
   - v) terminate railing into wall

Handrail detail



(Prevents hand from slipping between wall and rail if the person falls.)

7) moveable storage cabinets
8) storage areas limited to 2' depth
9) kitchen utilities specially designed
10) night lights w/exterior switch at entrances, switches can be illuminated and on timers
11) doors lightly spring loaded and avoid door knobs - use lever type instead
    i) leave 6 feet from door opening to any level change
12) avoid high reaching tasks
13) proper bathroom design
    i) avoid slippery surfaces
    ii) grab bars
    iii) showers w/seat
    iv) avoid smooth round fixtures

In conclusion it can be said that, "We are dealing with a broad spectrum of physical capabilities and the change is frequent and often rapid, creating new need for the permanent tenant."[8] How the environment changes with these needs can determine the success or failure of the project.

[8] "The Age of the Aging," Progressive Architecture, August 1981, p. 63.

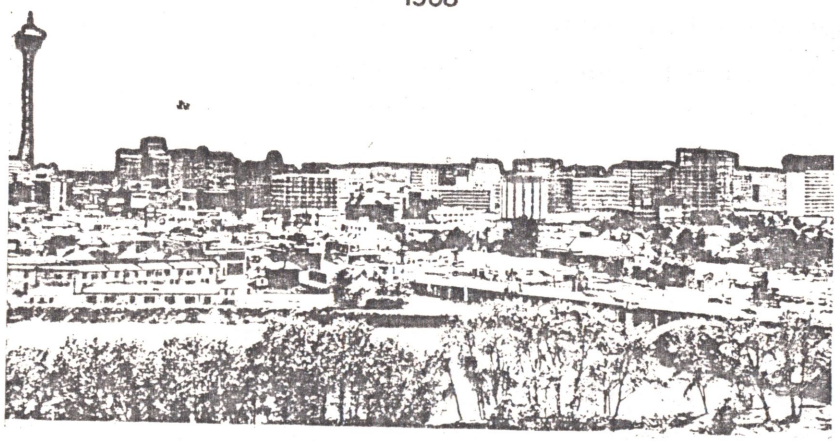


CASE STUDIES

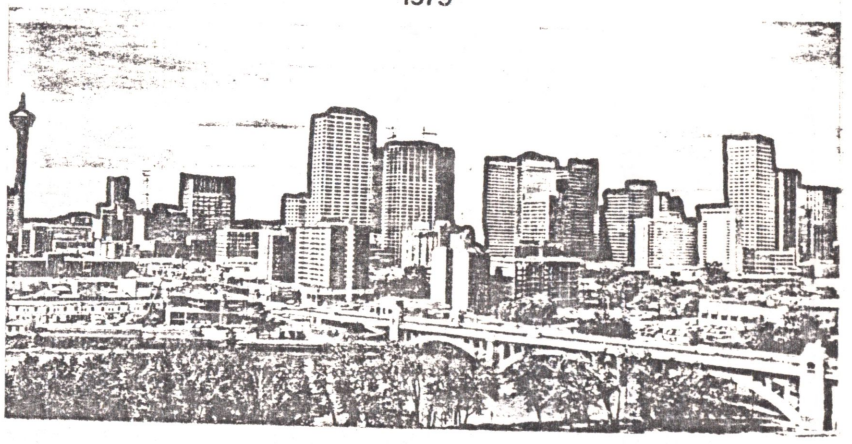
The City of Calgary is located in the southwest portion of the province of Alberta, just 70 miles east of the Canadian Rockies. It is the energy capital of Canada and is becoming the financial capital of western Canada. As the site of the 1988 Winter Olympics, it has developed a progressive and dynamic character.

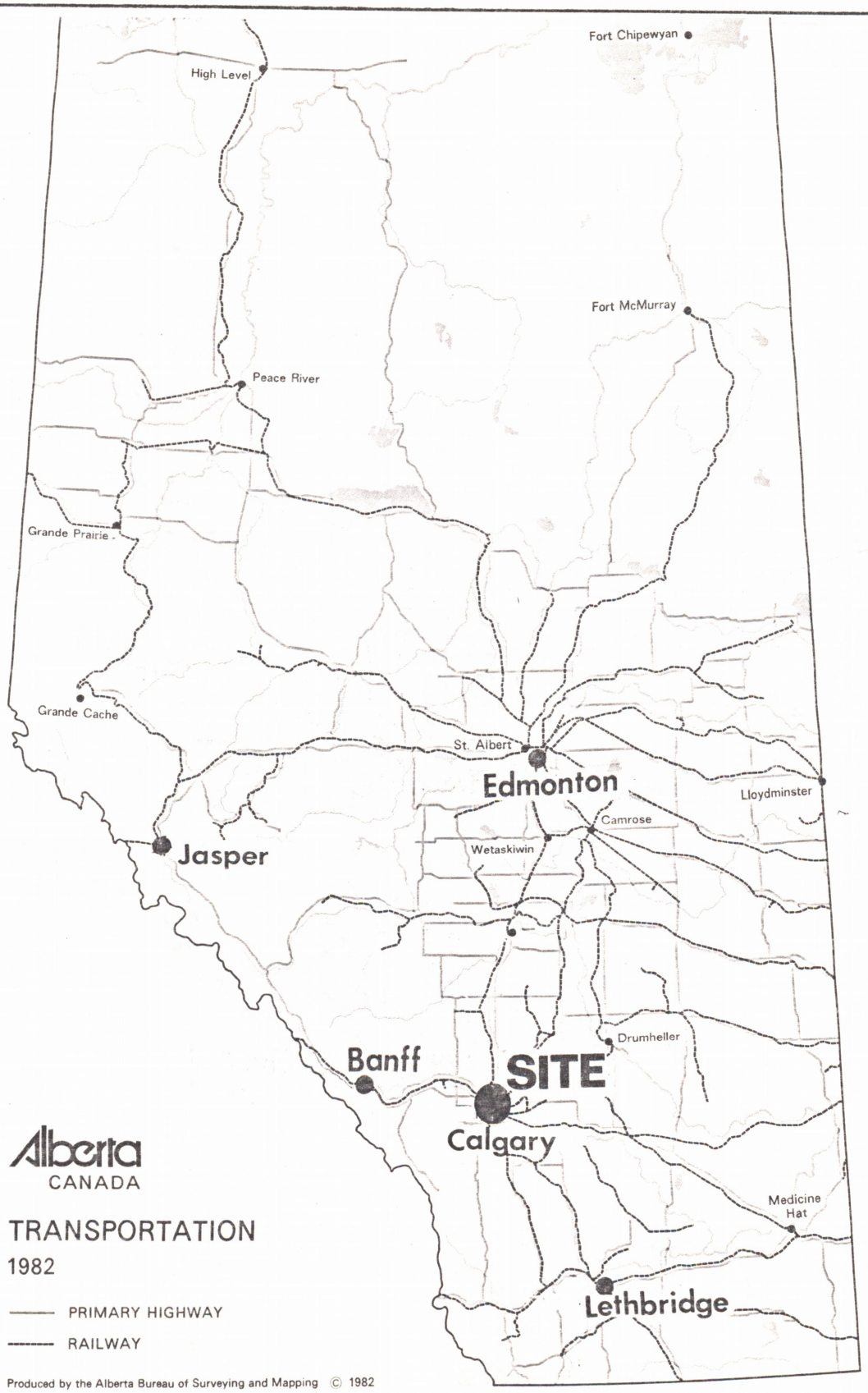
Situated at a latitude of 51°03'07" north and longitude of 114°22'14" west it stands at an elevation of 1,048 meters (3,439 ft) and covers an area of 489 km^2 (188 mi^2). Centrally located, it is only 1000 km from Vancouver to the west and 1300 km from Winnepeg to the east. The U.S. border is only 222 km to the south.

1968



1979





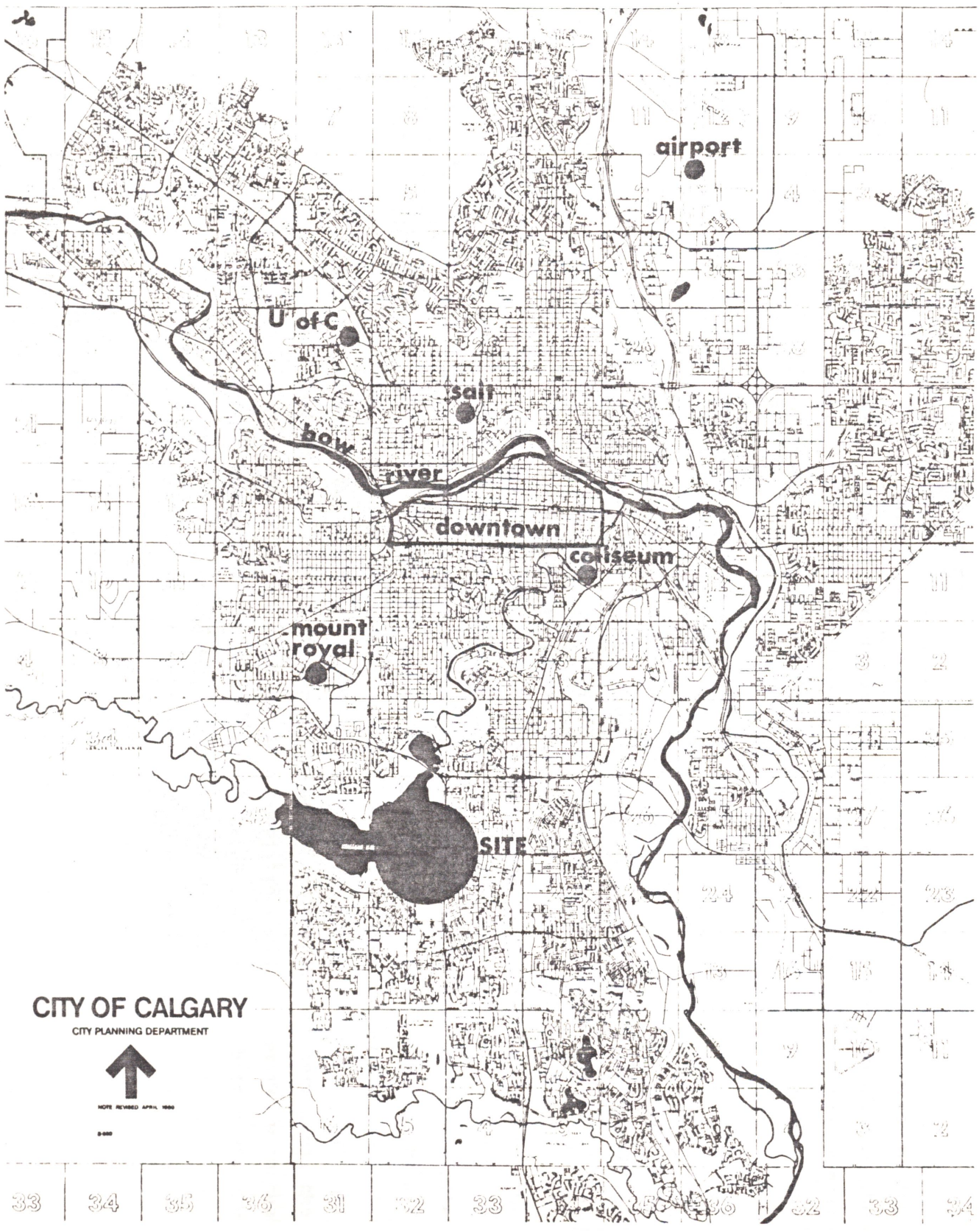
Alberta
CANADA

TRANSPORTATION
1982

—— PRIMARY HIGHWAY

------ RAILWAY

Produced by the Alberta Bureau of Surveying and Mapping © 1982


airport
U of C
salt
bow
river
downtown
coliseum
mount
royal
SITE
CITY OF CALGARY
CITY PLANNING DEPARTMENT
NOTE REVISED APRIL 1980
33
34
35
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33
34

CLIMATE

The Calgary area experiences some unique characteristics in its climate, mainly attributable to the proximity of the mountains to the west of the city. Chinooks bring needed relief to the winter conditions, changing the local temperatures by as much as 34°C in one day. The winds associated with these chinooks commonly break up the temperature inversions which contribute to the air quality problem in Calgary. With the mountains to the west, many of the storm systems come from this direction and winds commonly come from the west during much of the year. The frost-free period extending from May 28 to September 12 averages 106 days with the shortest period being 42 days. Calgary also experiences an unusually high number of sunny days, with an average of 2,207 hours of bright sunshine every year, one of the highest in western Canada.

Concerning the microclimate, there are some definite site concerns. During the fall there is a potential for fog developing off the lake which usually moves into the site in the morning hours. Also, due to the sheltered nature of the site, winds are not as extreme. Much of this reduced wind problem is due to the 30-foot berm along the west boundary of the site and this condition could be improved with the proper vegetation planted along this bank, adding even better shelter to the site. With the chinook conditions the potential for snow build-up along the berm is reduced, but problems could occur during stormy periods and should be considered.

Mean Total Precipitation Per Year	437.1 mm	17.2 inches
Mean Rainfall Per Year	298.9 mm	11.8 inches
Mean Snowfall Per Year	153.9 cm	60.6 inches
Mean Number of Days with Precipitation	133 days	
Maximum Recorded Precipitation in 24 hours	95.3 mm	3.8 inches

Wind

Mean Wind Speed	16.9 KPH	(10.5 MPH)
Maximum Speed (Gust Recorded)	129.0 KPH	(80.0 MPH)

Relative Humidity %

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
RH	71	72	68	58	53	58	57	58	58	54	69	69

These figures represent the mean values of relative humidity taken at all hours over a ten year period.

Hours of Bright Sunshine

Month	Hours	Month	Hours	Month	Hours
Jan.	98.9	May	236.7	Sept.	187.7
Feb.	121.4	June	240.4	Oct.	165.9
March	155.7	July	317.2	Nov.	115.7
April	196.3	August	277.8	Dec.	93.8

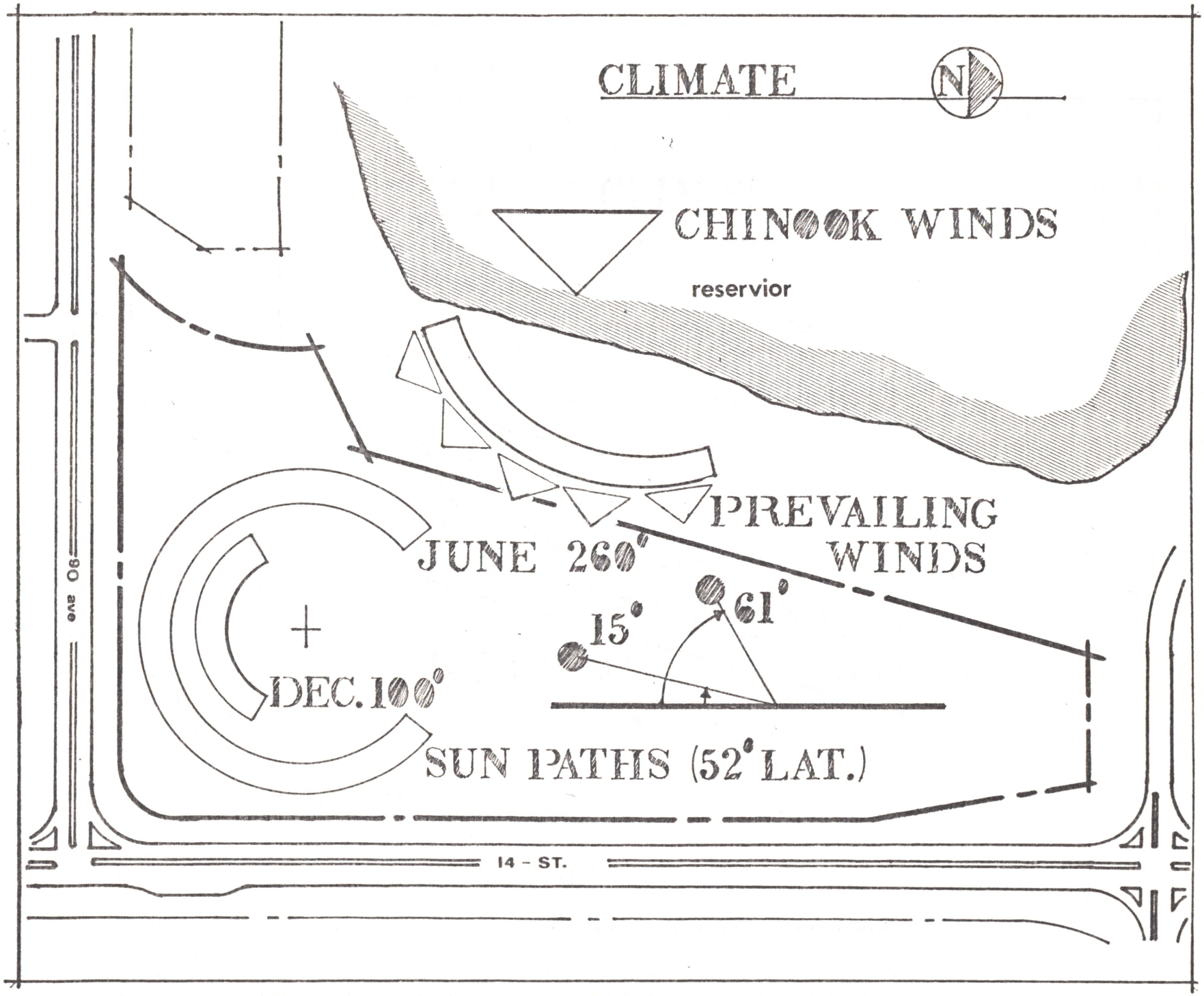
Yearly 2,207.4

Temperature

Mean Daily Maximum Temperature	9.7°C	49.5°F
Mean Daily Minimum Temperature	-2.9°C	27.0°F
Mean Daily Temperature	3.4°C	38.0°F
Maximum Recorded Temperature (Absolute)	36.1°C	97.0°F
Minimum Recorded Temperature (Absolute)	-45.0°C	-49.0°F
Heating Degree Days Below 18°C	5345	

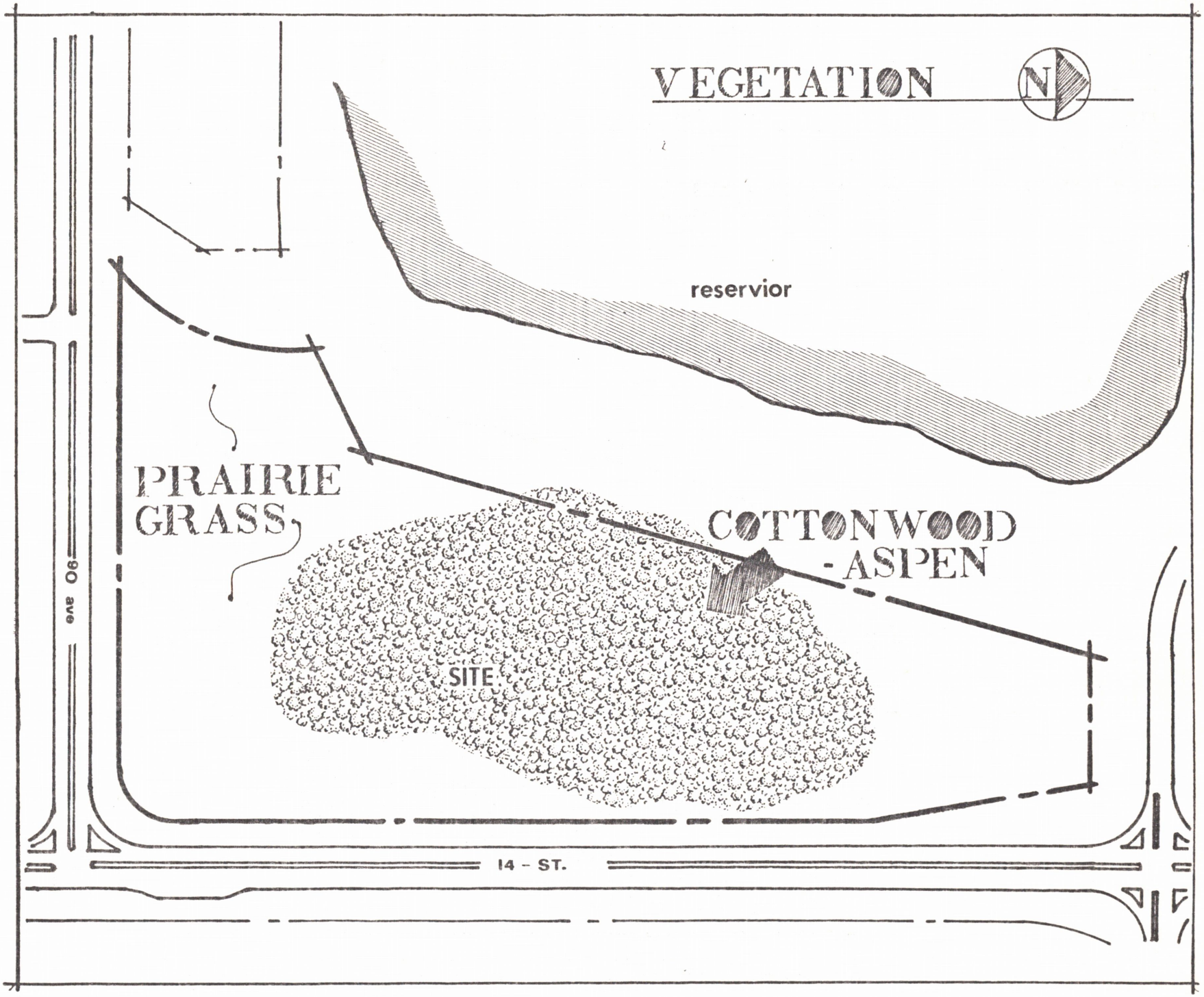
It is the combination of moderately warm summers with mild fall and winter temperatures that makes Calgary a delightful place to live. Spring weather brings most of the surprises to Calgary. It is variable, ranging from mild and sunny to wet snow and cool temperatures. These fortunately are of short duration and bring much needed moisture to the land.

SOURCE: Calgary in Fact, "A Profile on Canada's Dynamic City," The City of Calgary Department of Business Development, 1979.


CLIMATE
N
CHINOOK WINDS
reservior
PREVAILING
WINDS
JUNE 260°
61°
15°
DEC. 100°
SUN PATHS (52° LAT.)
90 AVE
14 - ST.

VEGETATION

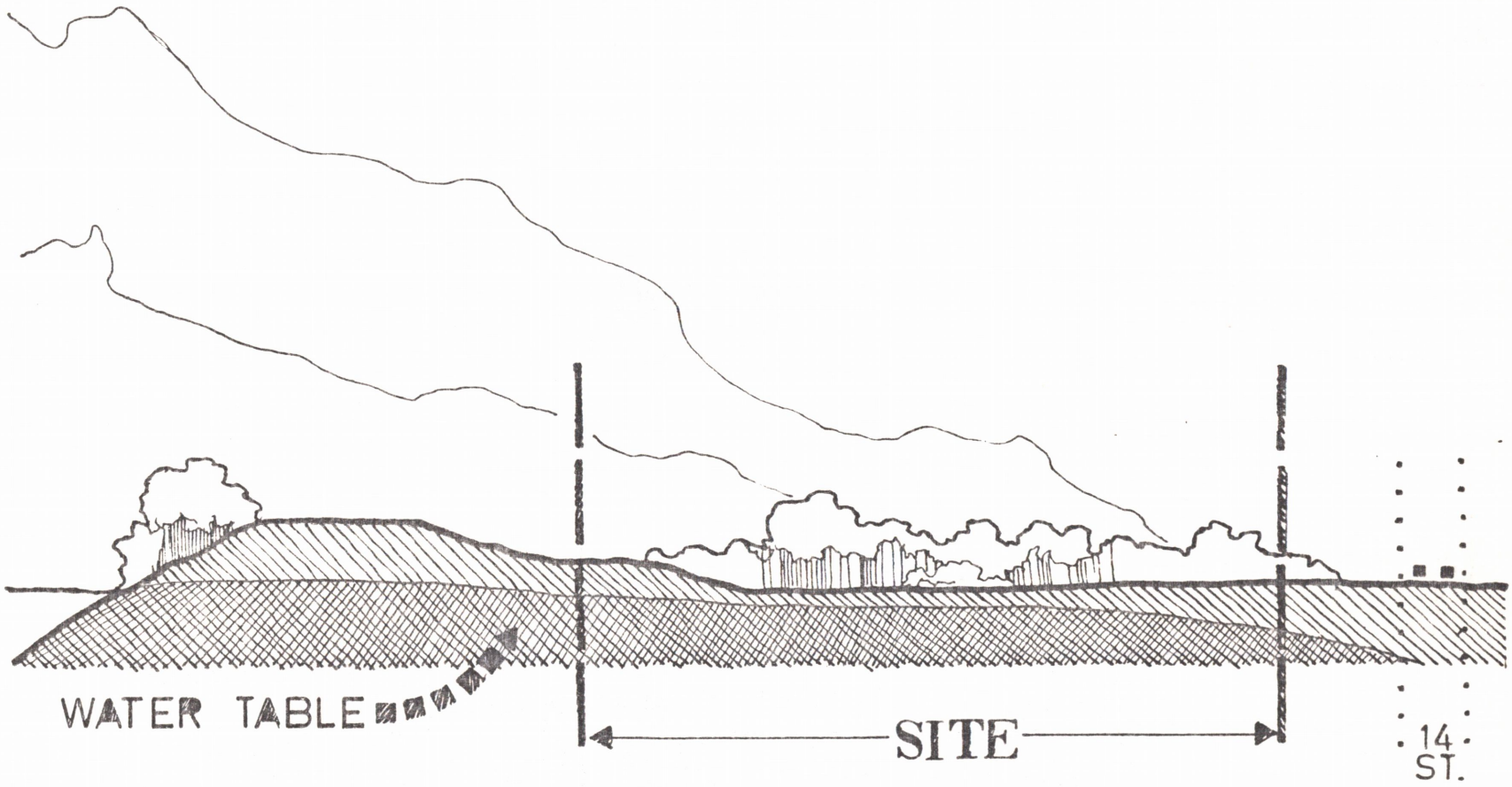
The site proper is still in its natural state with a substantial proportion of the site being tree covered. Mainly consisting of cottonwood, aspen and brush, there would be a potential for leaving some of this forestation in its natural state. Much of the tree growth has been possible because of the high water table in the area. The portions not covered by trees consist mainly of prairie grass one to two feet in height.


VEGETATION
N
reservior
PRAIRIE GRASS
COTTONWOOD - ASPEN
SITE
90 ave
14 - ST.

GEOLOGY

Due to the construction of the reservoir and the 30' berm immediately to the west of the site, it is considered a poorly drained area. This may constitute some type of artificial drainage system to eliminate any potential seepage problems.

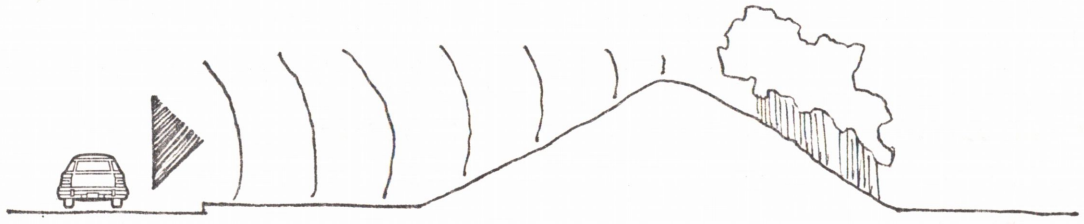
Since the initial proposal indicated high-rise buildings, it can be assumed the stability of the soil is adequate for the proposed facilities. A series of tests would have to be performed to determine the soil type and structure to confirm this assumption, provided one hasn't been performed. To date no evidence of such a test is available.



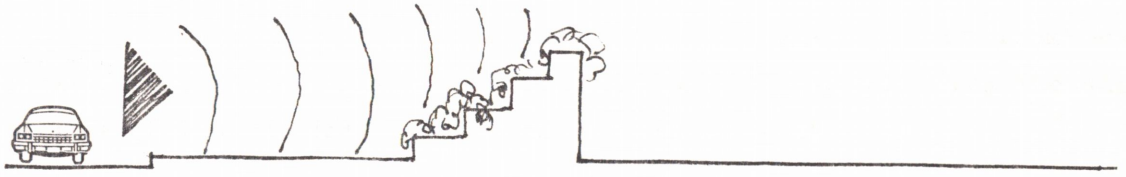
WEST TO EAST SECTION 100' = 1"

NOISE

Due to the high volumes of traffic on 14th Street and along 90th Avenue, there will have to be special considerations required to alleviate the noise problem. Berming or some type of sound barrier are popular solutions to the problem in other areas of Calgary. The type of barrier provided is usually dependent on the available space. With a large boulevard along both streets, both solutions would be possible.



Berming



Concrete wall

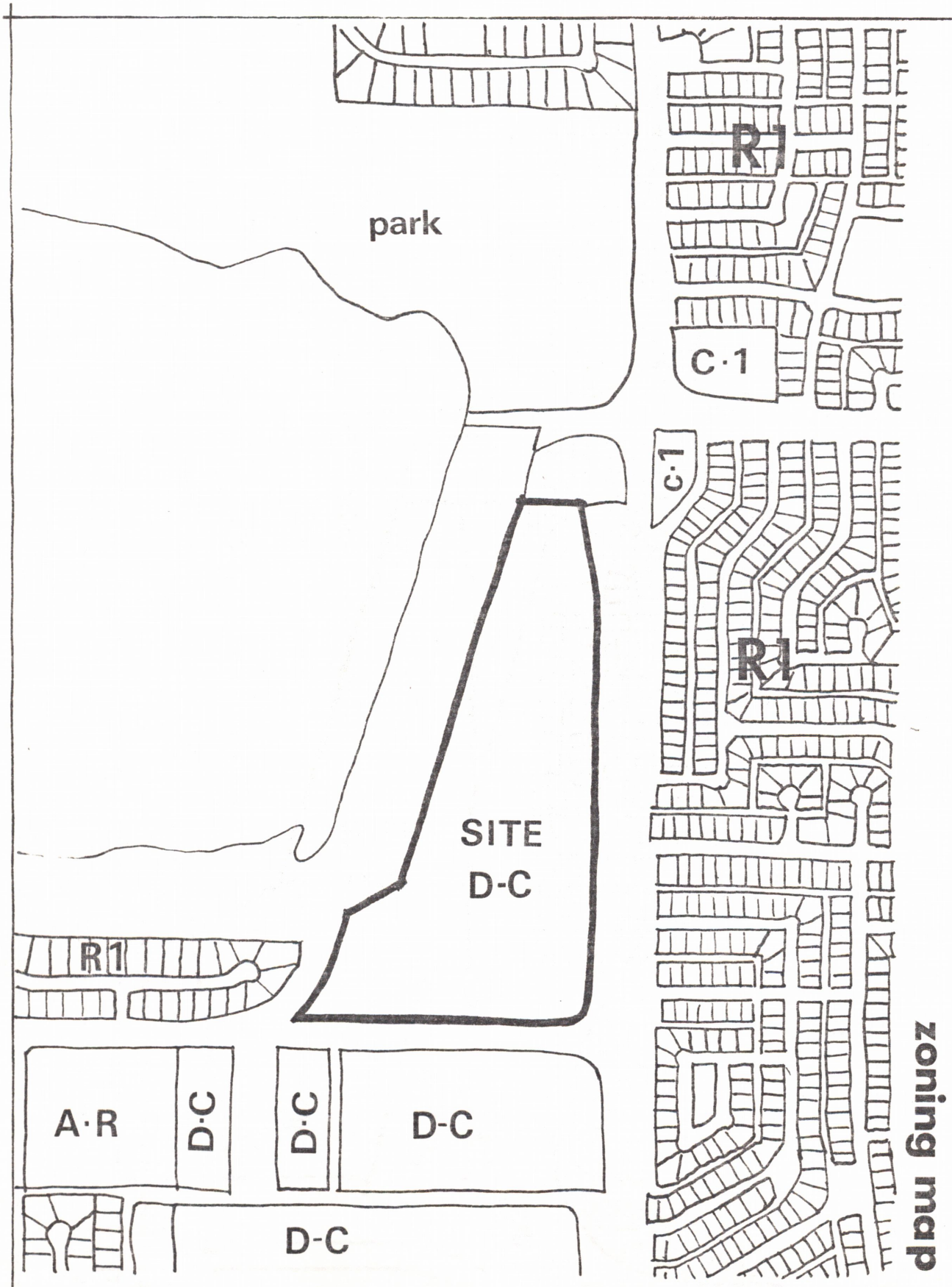
VIEWS - LANDMARKS

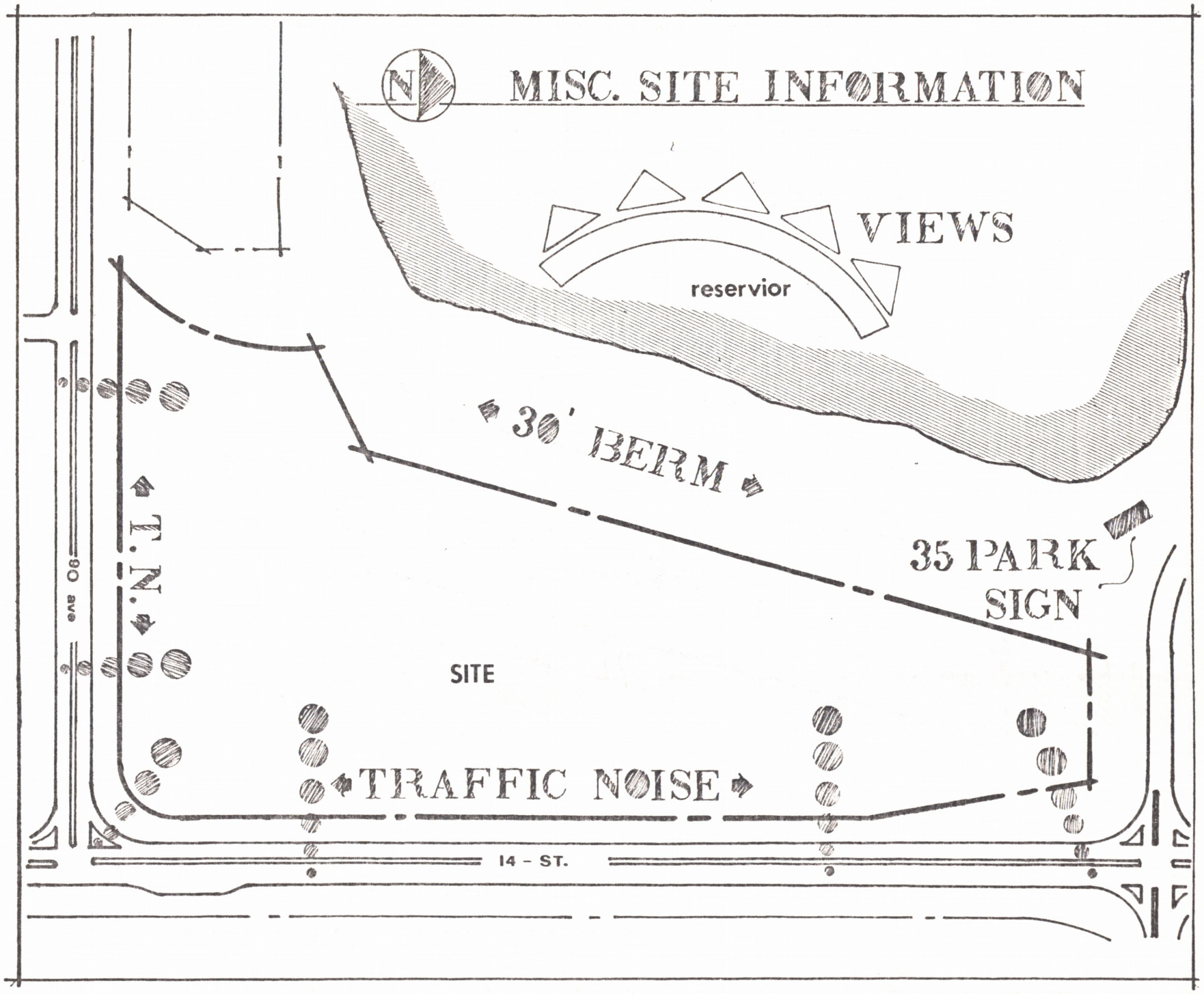
Due to the relation of the site with the reservoir, a number of unique aspects can be pointed out. Firstly, the major view of the reservoir and the mountains to the west are blocked by the 30-foot berm bordering the west side of the site. Studies have indicated that to fill the site in to the level of the berm would require 1.7 million cubic yards of material at a cost of over $8 million. This would be an inappropriate solution, in view of the prohibitive cost, but the potential of partial filling is possible. In view of this barrier the potential access to the park area and lake's edge will have to be improved to allow the user enjoyment of this amenity.

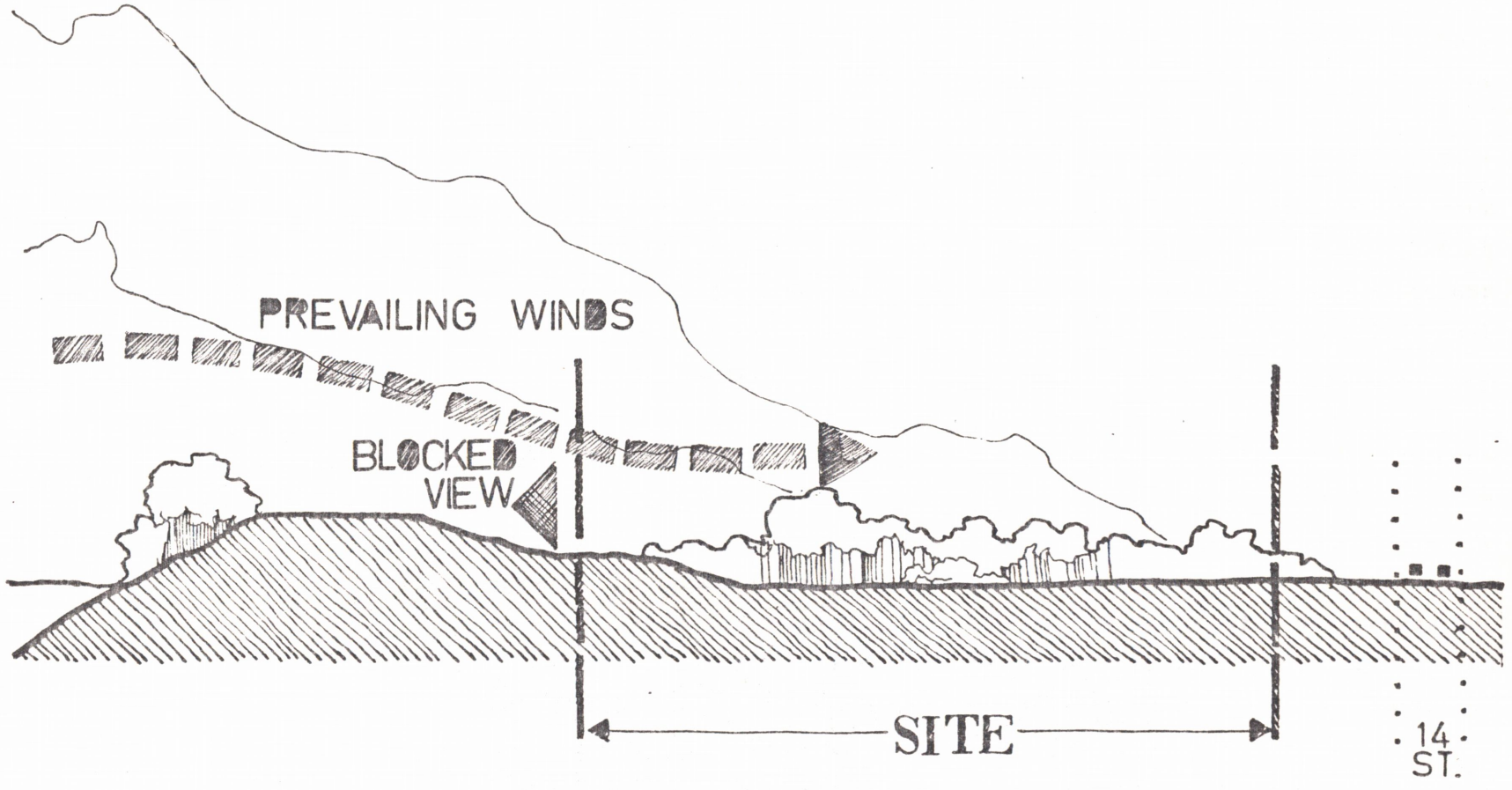
To the north a parking lot for Heritage Park provides little view. The east and south edges are bonded by high traffic streets which will be blocked by sound barriers. Some type of aesthetic treatment of these barriers should be considered.

In terms of landmarks, the 35-foot high Heritage Park sign on the northwest side of the site is a prominent feature in the landscape. The two apartment towers to the southwest can also be seen from most parts of the site. Portions of Heritage Park can be seen from the site because of its proximity on a hill to the northwest.




park
R1
C·1
C·1
R1
SITE
D-C
R1
A·R
D·C
D·C
D-C
D-C
zoning map


N
MISC. SITE INFORMATION
VIEWS
reservior
30' BERM
T.N.
90 AVE
35 PARK
SIGN
SITE
TRAFFIC NOISE
14 - ST.



WEST TO EAST SECTION 100' = 1"

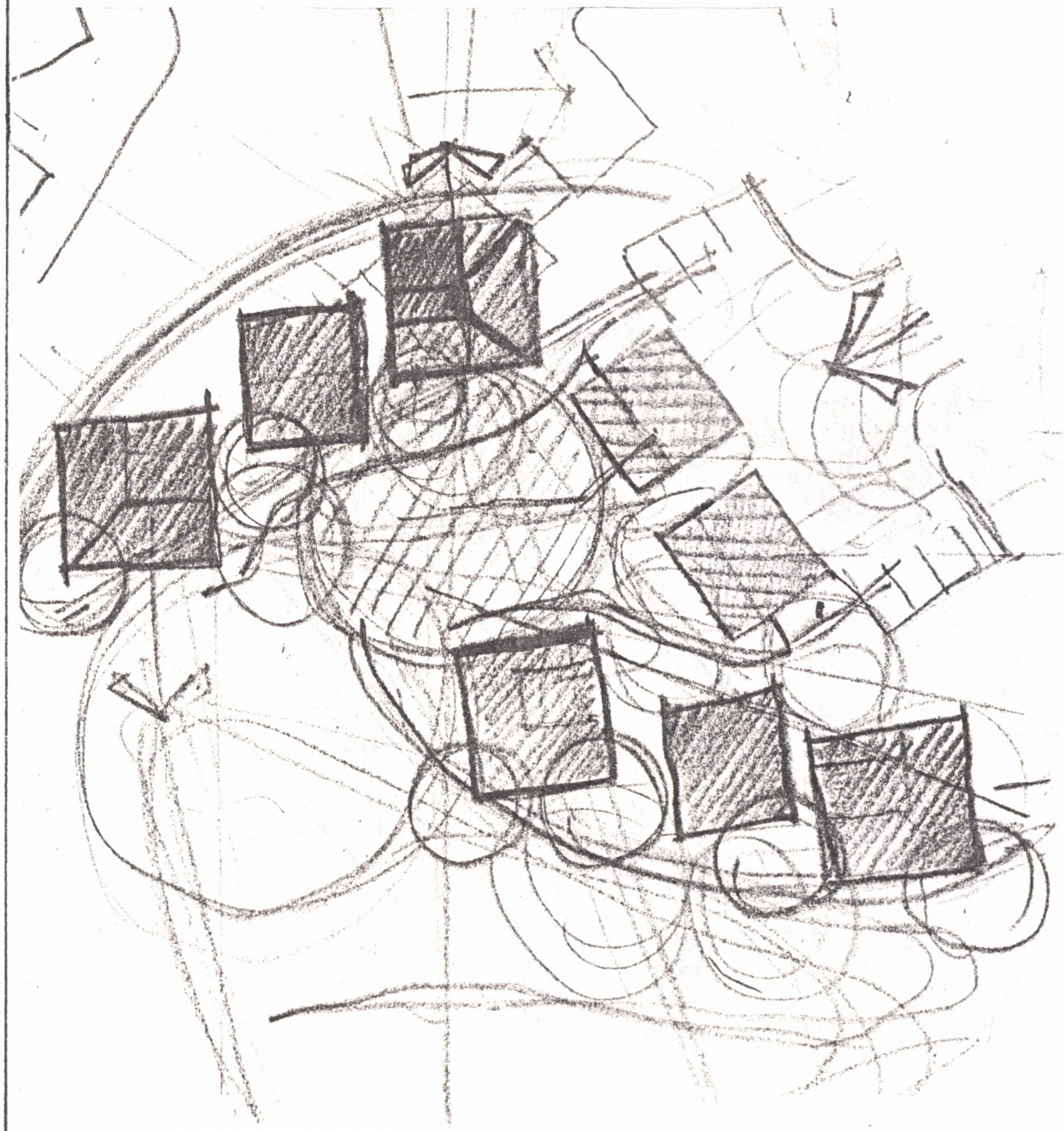
CIRCULATION

Calgary has a number of transportation systems to accommodate the needs of the city. Heavily reliant on the automobile, the network of roads have been substantially improved to allow for the anticipated high volumes. With one of North America's highest number of cars per capita, independent transportation has become a luxury taken very much for granted and has contributed to the suburban sprawl in the City of Calgary.

Other areas of improvement include the addition of a light rail transit system which provides transportation to the downtown area for the southwest section of the city. The Heritage Station is located 1½ miles from the proposed site and is easily accessible by bus or car with plenty of parking provided. The city plans on adding additional legs to the system in the future in order to expand the existing service.

The city also has a comprehensive bus system which includes express routes, dial-a-bus, special event services, as well as the regular bus network. There is also a mini-bus system servicing the elderly and handicapped people in the Calgary area.

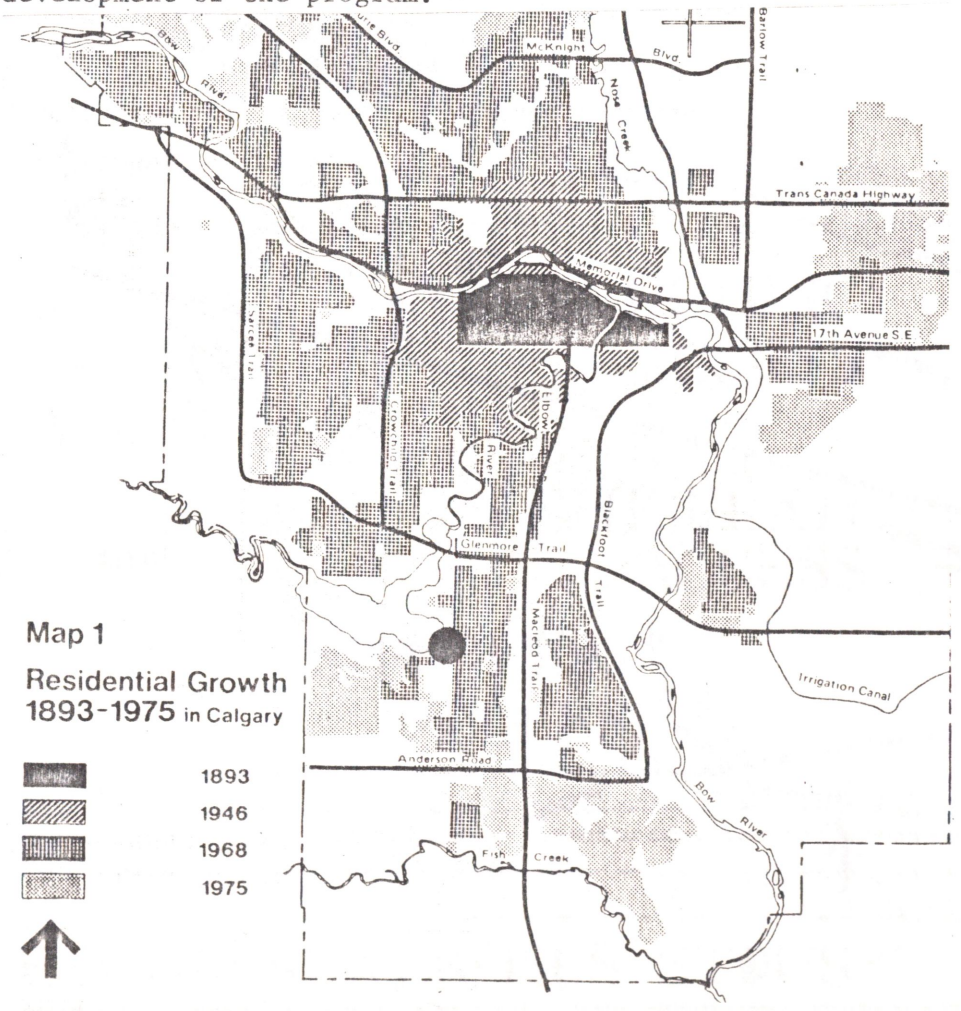
Provision for a special on-site shuttle system will be considered. The system is expected to provide the residents with an alternative way of getting to and from needed services in the surrounding community. These services might include shopping, hospital visits, golf courses, Heritage Park, churches, etc., and could be adjusted as demand dictates.

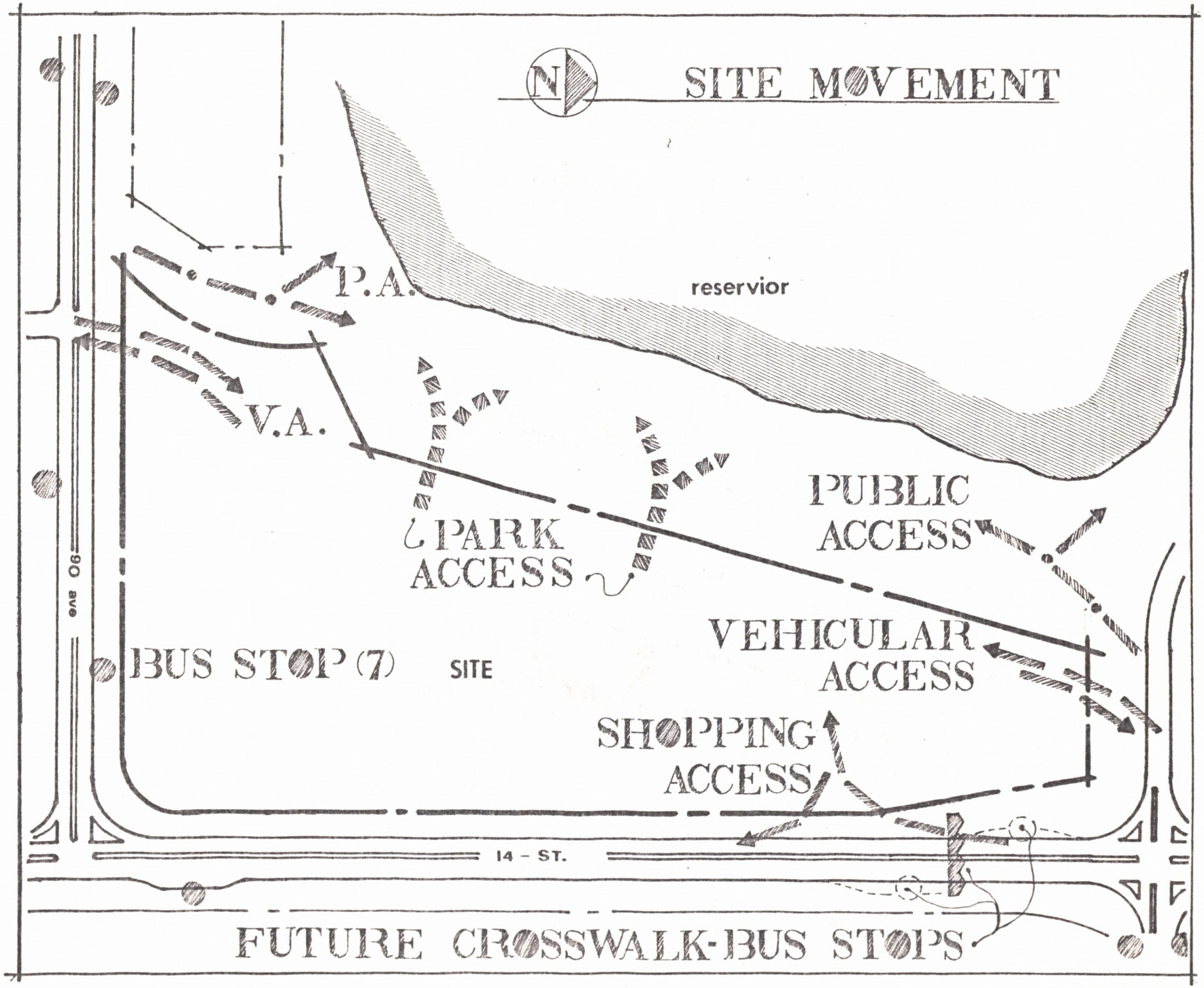


THE SITE

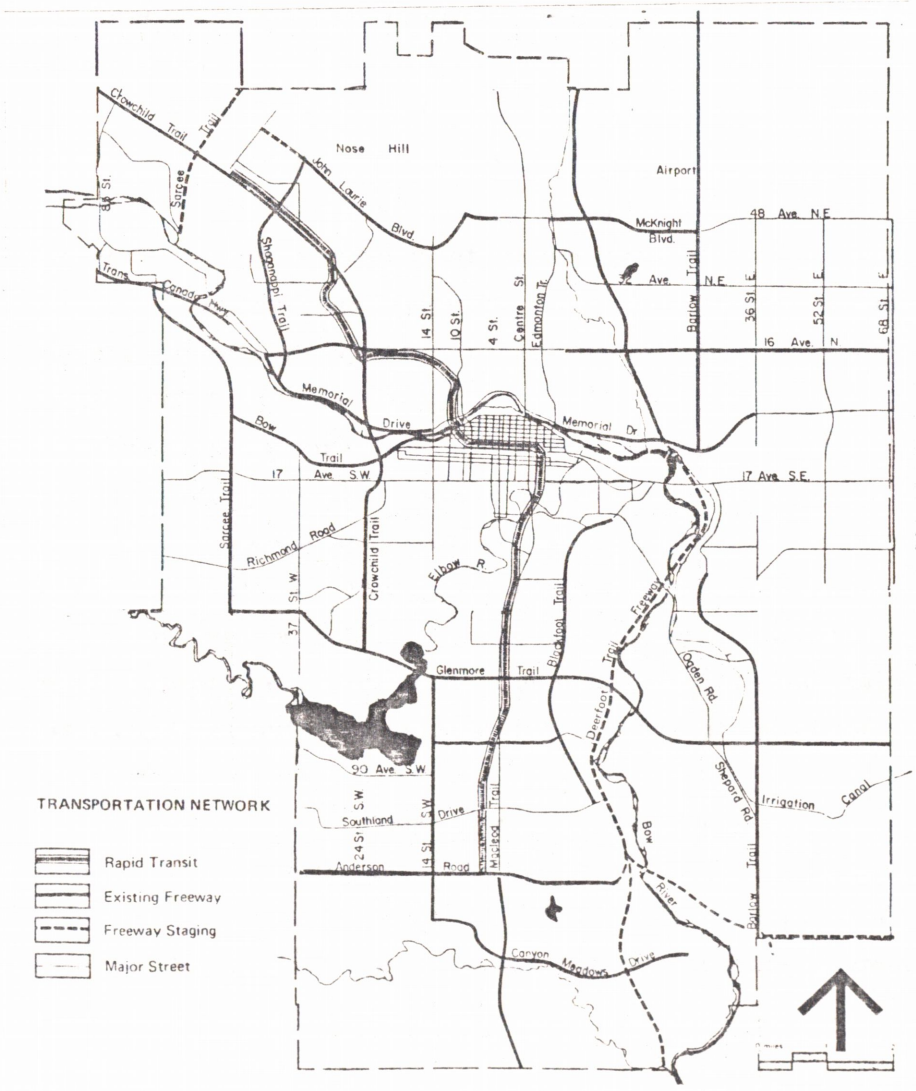
ZONING

At present the site is zoned D-C (direct control) with all applications for development subject to approval by the planning commission of Calgary. The areas around the site are zoned R-1 (single family) with some D-C, A-R and C-1 plots. A density study has been developed and committee recommendations considered within the development of the program.




N
SITE MOVEMENT
P.A.
reservior
V.A.
PARK ACCESS
PUBLIC ACCESS
VEHICULAR ACCESS
BUS STOP (7)
SITE
SHOPPING ACCESS
90 AVE
14 - ST.
FUTURE CROSSWALK-BUS STOPS

On a larger scale Calgary maintains a rail station, Greyhound bus service and newly expanded international airport, all of which provide transportation to places outside of Calgary.



IMPACT STUDIES

Considering the size of the proposed development, it would seem appropriate to study the impact it will have on the surrounding community. Due to a number of attempts at developing the site already, two studies were developed outlining many of the pertinent aspects to be considered.

Since 1963 the Campeau Development Company (present owners of the land) have attempted to develop the 38-acre site. Although several attempts have been made using a variety of schemes, none have been successful. As a result of these attempts, two reports (one by the Calgary Planning Commission in 1977 and a second Commissioners' Report in 1979) have been written regarding the proposals and their impact on the surrounding area.

The initial proposal attempted to develop 1217 units in 7, 14-16 story apartment units, complete with a major commercial centre. This proposal, although approved by the city fathers, was met with considerable opposition by the local community who envisioned the site to be developed into a park. As the first report would indicate, the high cost to purchase and develop the site made it unsuitable for a park and the Park Commission recommended the city not purchase the land for park purposes.

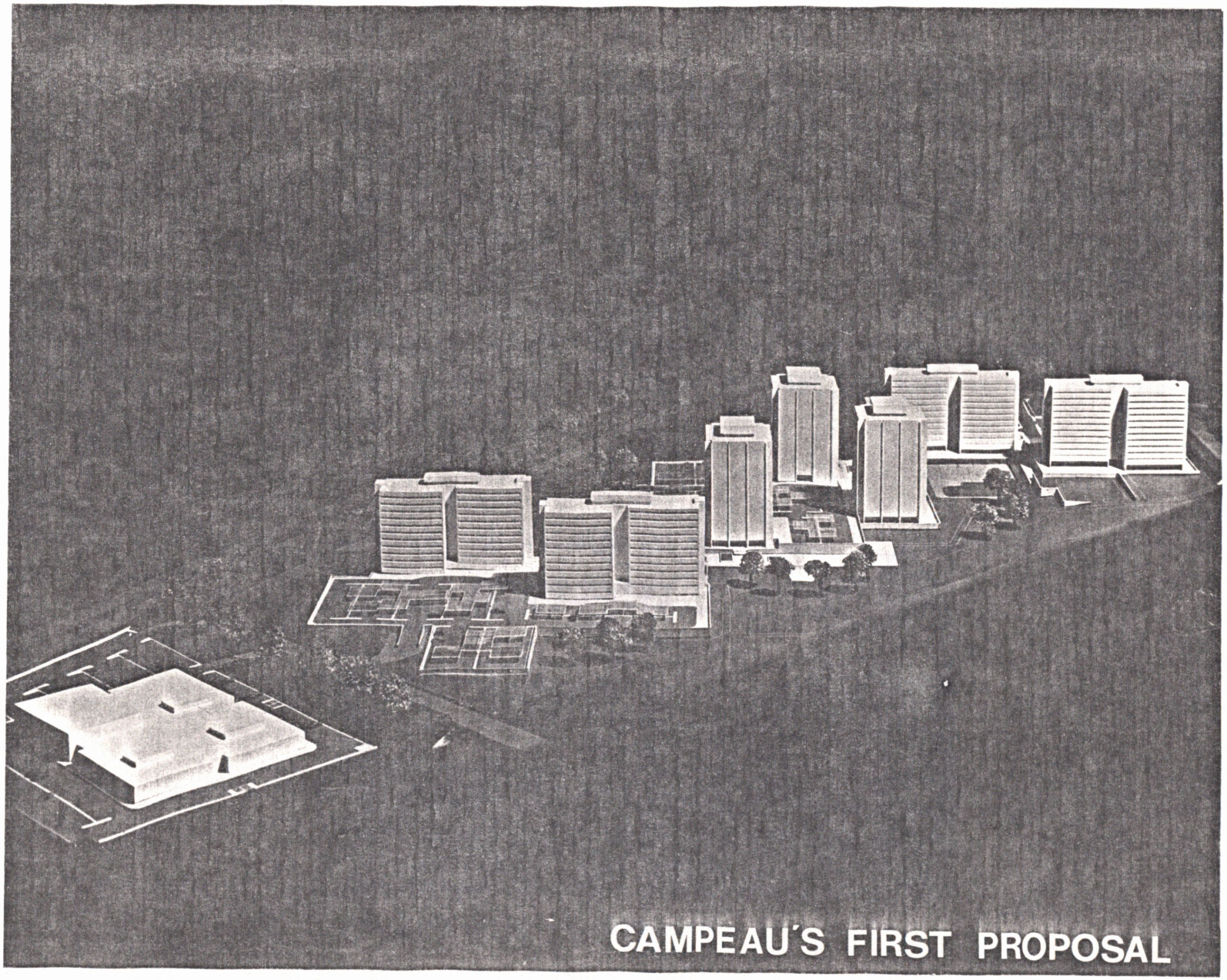
Since that time Campeau has proposed the development of a 653 unit complex which has also been defeated by local community groups. In each case the issues dealt with the negative impact the proposals would have on the unique lake site and the surrounding community.

Much to the surprise of the communities the proposals would have little effect on the area, aside from the fact that a potential park facility would be lost, but studies have already shown this to be unfeasible. The reports indicate minimal impact in a number of areas.

Issue	Effect
Traffic	Less than a 1% increase in present volumes.
Pedestrian safety	Pedestrian overpass to be provided across 14th Street by city.
Sewer and water	Both are adequately designed to handle the increased volumes.
Impact on housing market	No substantial effect on resale of existing housing.
Impact on park use	Not a large enough development to produce a negative impact, considering the size of the park.
Density	The suggested 22 p.p.a. is higher than the proposed density of 14 p.p.a.
Law enforcement	Already considered a low-crime area.

In relation to the project proposed here some specific issues are of concern.

Schools	The age group dealt with here would improve the tax base for the area and not increase the demand on present primary education facilities.
Health and medical facilities	It has been shown that no specific increase in use can be related to the concerned age group (50 and over). Secondly, a major addition to the Rockyview Hospital is due to be completed in 1984 and is located 3/4 of a mile north of the site.



Courtesy of Campeau Development Corporation

Judging from these reports and concerns voiced by the community, any type of high density development would be inappropriate, even though the site may be able to physically support it. Community opposition will be a natural response to any proposal other than a park and becomes an important issue that cannot be neglected. The facility proposed here will undoubtedly meet with some opposition and will be an issue when presenting the project. Applying some aesthetic design qualities and the very nature of the project proposed here should improve the image of the development and help in any attempts for approval.



Calgary housing - Lake Bonavista

SERVICE-ACTIVITY CENTRES

Within the immediate site area there is quite a range of potential services available to the residents of the proposed community. A proposed shopping centre on the site will provide many of the needed daily facilities. Included would be a:

- bank
- drugstore
- grocery store
- dry cleaners
- bakery
- clothing boutique
- beauty/barber
- possible restaurant (fast food)
- possible florist

Available within easy driving distance (1-5 miles) would be all the necessary service facilities one could possibly need (refer to inventory map of area).

The amenities available in the immediate site area are also quite extensive. They include such things as:

- park setting along a major lake
- canoe club (largest program in Canada) hosting the Canadian nationals this past summer
- yacht club with 300 members
- equestrian club with 450-500 members
- Heritage Park, a historical park receiving 350,000-400,000 people annually
- potential for cross-country skiing
- bike and trim tracks that encircle the entire lake (approximately 15 km long)



INVENTORY MAP

- PARK & RECREATION SPACE
- SERVICE CENTRES
- SF SENIOR CITIZEN HOMES
- SPORT CENTRES
- CHURCHS
- MAJOR ROADS (BUS ROUTES)
- L.R.T.

Amenities offered within the city include a variety of cultural and sporting events. These include:

- Theatre Calgary
- Calgary Symphony
- several dinner theatres
- variety of special events held at the Jubilee Auditorium
- University of Calgary offers adult education programs
- Mount Royal College
- Southern Institute of Technology (SAIT)
- professional hockey and football teams
- the famous Calgary Stampede
- host to the 1988 Olympics
- a large number of private golf and recreation clubs
- Calgary Zoo and Planetarium

To the west only 70 miles from Calgary one of the most beautiful and scenic national parks provides outdoor amenities comparable to any in the world. Banff and Jasper National Parks provide downhill skiing, cross-country skiing, camping, hiking trails, and many other activities, along with a whole spectrum of support facilities.

One could, therefore, conclude that the facilities in the area are abundant and varied. Along with the facilities provided on site, a comprehensive program of support and activity services can be provided to the potential resident. It will become the role of management to coordinate and operate these potential programs. Therefore, much of the success of such a project relies on the quality of management and the facilities available.

CRITICAL DISTANCES

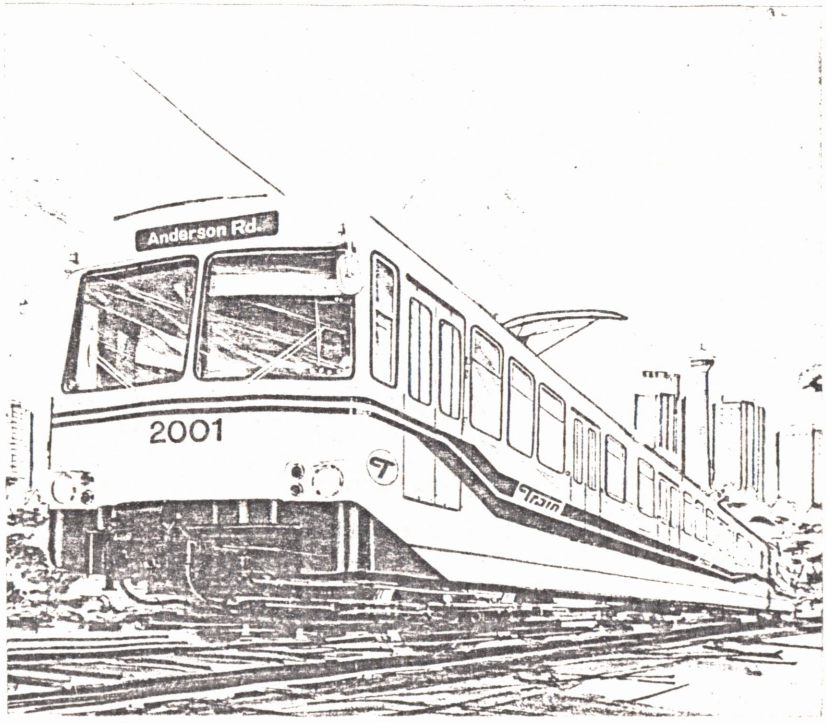
An area considered important in the locational analysis of this type of facility (elderly housing) is what has been called "critical distances." Based on the ability and the frequency of use of various support services, critical distances have been established which define the maximum distance a person is willing to travel for a number of frequently used resources.

Table 5. Use of resources, travel time, and distance to resources, compiled from several studies

Resource	Median % using	Modal frequency use (users)	Modal frequency of use (all)	Modal travel time (users)	Modal use distance	Modal nearest distance
Grocery	87	2/week	1 or 2/week	7 min.	1-3 blocks	1-3 blocks
Physician	86	several/year	several/year	15 min.	20 blocks	4-10 blocks
Visit one or more children	98	1/week	1/week-never	20 min.	10 blocks	
Shopping other than grocery	70	1 or 2/month	never			
Church	67	1/week	1/week	12 min.	4-6 blocks	
Bank	64	1/month			4-6 blocks	4-10 blocks
Visit friends	61	2 or 3/week	never	7 min.	4-6 blocks	
Visit relatives other than children	57	several/year	never	35 min.		
Beauty/barber shop	40					1-3 blocks
Restaurant	31	several/year			20 blocks	1-3 blocks
Park	30				1-3 blocks	
Clubs, meetings	29	1/month	never	15 min.	20 blocks	
Entertainment	19	1/month	never	15 min.	20 blocks	11 blocks
Library	18					11 blocks

Source: Bourg (1975), Cantor (1975), Carp (1974, 1975c), Lawton and Nahemow (1975) and Nahemow and Kogan (1971).

It should be noted that as the modes of transportation and access to such facilities improve the critical distances tend to increase proportionately with improvements. It therefore becomes important to realize that certain restrictions on site location may not be valid. In the case of this project it is generally felt that people of higher income are also considered more mobile and therefore these critical distances can be extended when evaluating the necessary locational qualities of such resources.



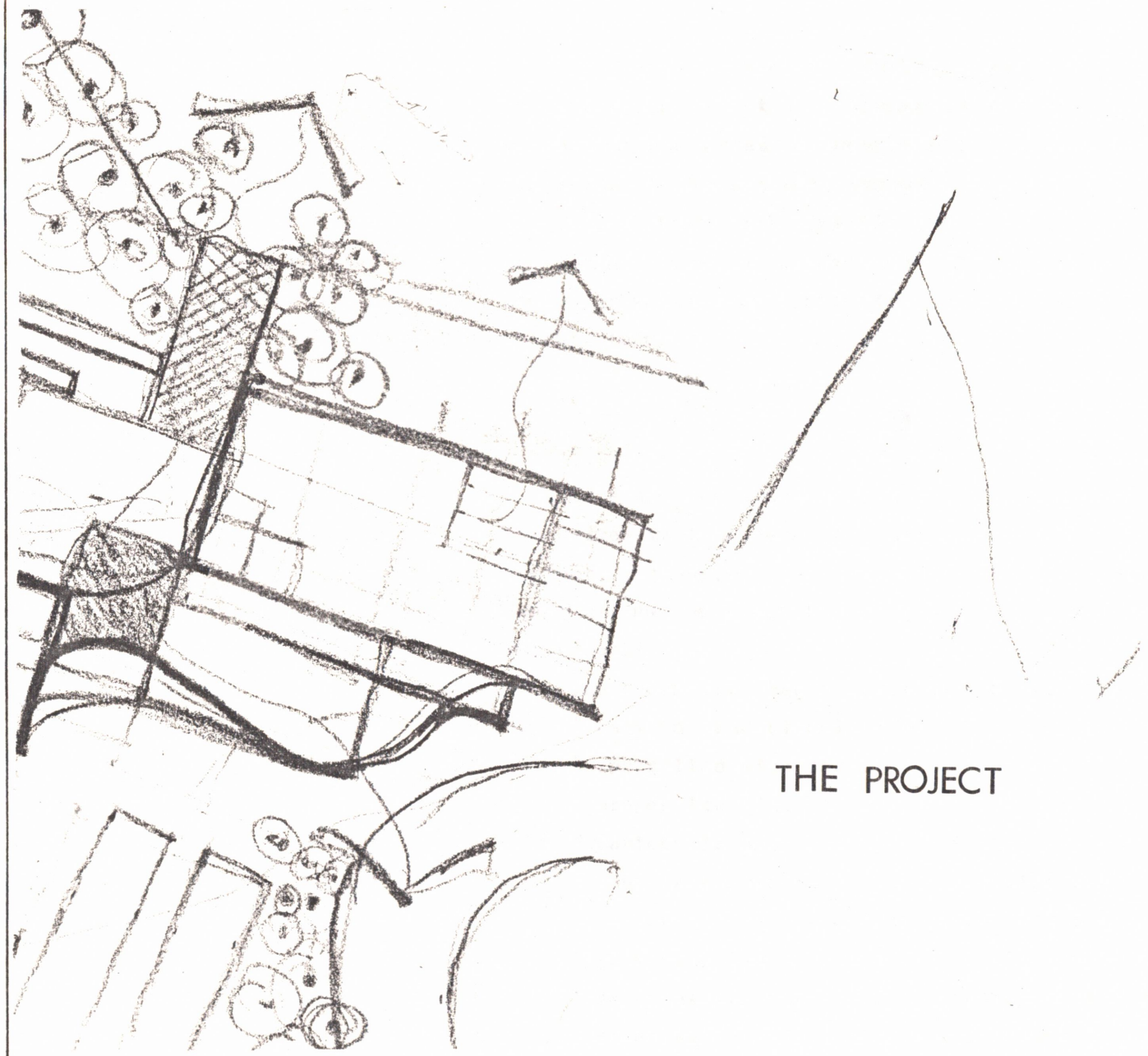
The day's end

As the day passed the movement through his mind
came much quicker than his legs would carry him,
his struggle, though small by conventional standards,
had brought him to the water's edge.

There his emotions were struck by a diffuse
line formed on the cool dark surface,
anchored at each shore's edge.
The light had become a connection between himself and
his distant past
bringing many comforting thoughts to mind.
Those memories remained,
even as the horizon absorbed the last of
the day's light.

With such subtle abruptness to the day's end
there came a renewed urgency
to capture the emotions,
held on the opposing horizon.





THE PROJECT

In terms of how the project begins to translate itself into an architectural solution, a number of design concerns can be identified in the various areas of development. With this in mind and realizing the scale of the project, emphasis has been placed on a limited number of concerns that deal directly with the theme, 'aging in place.' Since the project can be broken down into a number of distinct areas of study, it would seem appropriate to examine the contribution each makes to this theme.

The Site Plan

Here we can examine a number of design features which concern themselves with a sense of security, comfort and identity within the project. It begins to deal with that sixth sense mentioned earlier. How does one feel within the project -- does it portray a good first impression?

These concerns begin to translate into the following:

- easy to read circulation
- controlled site access
- proper lighting and signage
- variety in path (changing vistas)
- minimizing vehicular and pedestrian conflict
- use of locational devices (signage, ponds, rest areas, etc.)
- providing familiar architectural forms
- creating the potential neighborhood (social interaction)
- creating a community identity (sense of place)

- location of the site within the surrounding community
- facilities immediate to the site
- shuttle system

The Housing Units

Here we begin to deal with the individual and maintaining one's independence. In both the semi-detached housing and the apartment condominiums the functioning of interior spaces is important. This begins to include a long list of items which deal with the intricate detail and organization of each unit. Many of these details have already been listed in the program and they all begin to contribute to the individual's identity and sense of belonging. The design attempts to develop a barrier-free environment by providing:

- flexible living units (capacity for handicapped)
- variety of units
- more manageable spaces
- maintenance free
- proper use of materials
- provision for proper privacy
- good emergency systems (alarms, sprinklers, PBX)
- safe kitchen and bathroom design
- providing the internal wiring for life support systems

It should be noted that due to the nature of semi-detached housing versus the apartment condominiums emphasis is placed on exterior spaces in the semi-detached housing. The apartment condominiums on the other hand will deal more with the interior spaces (i.e. the interior street concept).

The Club House

The club house begins to provide a central focal point for the residents and its location must therefore reflect this concern. In this situation it has also become a transition point between the site and the park to the west. Architecturally it becomes the central organizer with everything happening around it, and for that reason there is no traditional back side to the building. The building should be inviting and able to accommodate a variety of events and social interaction. Its purpose is to stimulate motivation and provide for the development of new social roles. It therefore should maintain warm open spaces and an exuberant atmosphere.

The Complete Care Facility

Here we are providing a service which not all the residents will need. Most will be able to live within their own homes. For those who do experience trouble in the normal daily functions of life, they may choose to move into this facility. Although no physical design of the facility is included here, it should include the following as design considerations:

- avoid any connotations of an institutional setting
- designed to support, not cater to the individual (maintaining independence)
- able to use all the facilities available to the rest of the residents
- provides some type of medical supervision but not constant medical care

° avoid isolating it from the rest of the site, make it an intricate part of the project

If handled improperly, this facility could very definitely hurt the project as a whole. With this in mind, it should be handled in a much more comprehensive manner than has been dealt with here.

APPENDIX 1

In view of the fact that the surrounding communities are concerned with any proposed development on the site, it would be appropriate to do a brief density study. This study must consider the concerns raised by the community and relates directly to the number of houses the site could absorb, without adversely effecting the surrounding area. Considering an available site area of 37.76 acres, of which 5 acres has been designated for a shopping center, the following table indicates 3 density options.

Table 6. Density options for site

	Option 1 (70 p.p.a.)	Option 2 (45 p.p.a.)	Option 3 (22 p.p.a.)
Housing units	2,000,000 ft^2	1,300,000 ft^2	600,000 ft^2 (13.7 acres)
Parking (150% req.)	500,000	300,000	130,000
Roads	200,000	200,000	200,000
Required open space	619,920	445,000	217,800
Support facilities	300,000	200,000	75,000
Site coverage	6:1	3:1	0.7:1

Option one, which is similar to the initial Campeau proposal, would require anything from 6-10 story apartment blocks. Although the

impact in terms of functional requirements could be met, the density is aesthetically unacceptable. It has been generally observed that the impact on present services would be prohibitive, but this has been proven to be untrue. The impact is seen more as degenerative to the community as a whole. Maintaining a suburban atmosphere with plenty of open spaces and unobtrusive structures is threatened by such a high density. Option two, although not as severe, still carries with it many of the same negative connotations as option one.

On the other hand, option 3 is in keeping with the present concept of community which is perceived in the surrounding area. Although still objectionable because of the desire to develop the site into a park (realistically unfeasible) the integrity of the area is maintained, at least on a generic level. The term generic becomes relevant when examining the quality of the project. Treated as tract housing, the development will meet with the same resistance previously experienced. The architectural qualities much be such that community response becomes positive and supportive of any attempt to develop the site in a manner previously not thought acceptable

Thus the reason for this project to take on a character which deals in architectural quality, benefiting both the user and the surrounding community. Therefore, as a model facility for older people the effects of quality control can be two-fold, both indicating the importance of integration within and around the site. In doing so the impact becomes more acceptable and plausible.

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