THE PUBLIC QUALITY OF INTERIOR SPACES

with specific reference to shopping malls

By

CLEMENS POLLOK

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Department of School of Architecture

The University of British Columbia
Vancouver, Canada

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Abstract

Contemporary cities are to a certain extent characterized by buildings and facilities which withdraw pedestrian public activities from the exterior. The increased development of office and convention complexes, large community and shopping centres has shifted pedestrian activities from a coherent outdoor street network to isolated interiors. This process, described as the phenomenon of internalization, significantly changes the public quality of urban spaces. Exterior public space loses the liveliness of pedestrian activities and is reduced to a specialized vehicular movement. However, interior public space is an insufficient substitute for outdoor space because it provides for specific functions only which are often manipulated and controlled by private interests.

It is the intention of this thesis to identify and define the potential interior spaces have to serve as public spaces. The analysis focuses on the activity of shopping, one of the most basic daily public activities.

The thesis commences with the description of internalization and its impact on the network of public spaces. A case study of an area in downtown Vancouver indicating the location of shopping facilities demonstrates a typical distribution of public spaces in a contemporary urban structure.

A basic premise of the thesis is that the quality of interior public spaces can be evaluated by criteria for publicness which is equally valid for interior and exterior public spaces. The term *public quality* or *publicness* is defined by presenting criteria for social liveliness derived from outdoor public space. Three criteria, *choice, continuity of movement space,* and *global order,* are chosen in order to analyze selected interior shopping facilities to identify their potential to serve as public spaces.

The thesis concludes that from an architectural standpoint interior spaces have a rich potential to serve as public spaces, and in particular, the promotion of an overall public movement network which connects interior with exterior public spaces enhances interior publicness. However, because of economic constraints shopping centres tend to promote the interface between customer and merchandise rather than the interaction of people and other experiences of publicness.

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Introduction

1. The phenomenon of internalized public spaces

Public space traditionally has been the outdoor space, the place where people meet, socialize, exchange goods and ideas. In public outdoor space one encounters the concept of the city, the city's relation to the world, its economic power and the identity of its citizens:

> "It was, and in many places still is, a manifestation of the local social order, of the relationship between citizens and between citizens and the authority of the state. The plaza is where the role of the individual in the community is made visible, where we reveal our identity as part of an ethnic or religious or political or consumer-oriented society, and it exists and functions to reinforce that identity" (Jackson, 1984, p. 18).

Outdoor public space connecting all buildings has essential functions for the social coherence of people in a settlement. Here people articulate their interests, are confronted with other people's ideas, and develop common rules of co-existence.

The distribution, form and use of public spaces is subject to continual change. As society changes, the way society socializes and the way it organizes and uses public outdoor space changes as well. The contemporary societal organization and its idea about public space demand continuously renewed solutions.

In contemporary cities the public landscape has changed; the separation of functions has created a system of isolated activity centres, such as the introverted suburban home, the downtown office tower and the autonomous shopping centre.

> "Our cities, expanding vertically and horizontally beyond what were once city walls, are scaled to automated rather than anatomical movement. Because workplace and home are increasingly separate, few live in the city center, and the single-family detached home persists as the goal of most Americans. Electronic media and telecommunications link home with the outside world." (Chidister, 1988, p. 42).

The traditional mode of movement, pedestrian movement, has been replaced by vehicular movement which connects the separated and specialized functions. Pedestrian activities are increasingly withdrawn inside buildings. One can observe it in every city: community centres become an interior magnet by including facilities such as fitness rooms, clubs, restaurants, or libraries. Convention centres create a small inside world by combining meeting rooms with restaurants, shops, theaters and hotels. Huge office complexes in different high-rises share common ground levels, which contain malls. A clear example of the withdrawal of pedestrians from the outdoor street are large shopping centres offering a variety of concentrated facilities; not only shops or department stores, but also cinemas, theaters, offices, and restaurants, attract pedestrians inside buildings.

The withdrawal of pedestrian activities from the public street inside the private domain, the building, is referred to as internalization.

The internalization of pedestrian activities has a direct and indirect impact on both the public character of the outside street and interior public spaces:

1. Activity magnets like shops no longer determine street life; the outside street is optimized as space for car movement; in public outside spaces surfaces and elements change their character as carrier of societal information formerly reaffirmed by pedestrian use.

2. The provision of internalized pedestrian facilities separates the outside pedestrian movement network from the public street, dismembers it into single isolated experiences inside buildings, and disperses it in isolated pockets throughout the city. The interior of buildings, which was traditionally the private domain, takes over the role of pedestrian movement space for the public.

3. Public space, by its separation from outdoor space, is increasingly determined by individual interests. Subsequently, the complex experience of many competing influences on the outdoor street becomes inside a balanced and artificially stabilized environment, following private interests of individual owners in private buildings.

2. Interior spaces and their potential publicness

Observing the increasing process of internalization and the quality change in public space, the question arises whether interior public space has the potential to serve as a substitute for outdoor public space or as public space at all; whether interior spaces with their opportunities and constraints resulting from their disconnection from outdoor spaces can fulfill the criteria of public spaces.

In order to answer this question and to evaluate spaces according to criteria of publicness the term 'publicness' has to be defined.

Publicness or the public quality refers to the degree of social liveliness of public places. Publicness in this sense is achieved by structuring public space so that it encourages a wide range of activities and subsequently allows a wide range of people to use it.

The definition of publicness as 'social liveliness' points implicitly to the *political* characteristic of public space. Public space is characterized by being the platform for the whole society and is not restricted to certain user groups .

Public liveliness itself cannot be *created* by the provision of spatial or social conditions. However, the fulfillment of certain criteria in the organization of public space can create a social and spatial framework which *encourages* people to use public space. The many activities taking place create an atmosphere of publicness. It is assumed that certain criteria can be defined which encourage the use of public space as a starting point for social interaction.

This assumption implies that successful public spaces follow a set of basic criteria which are common to all public spaces; the individual interpretation of these criteria in architectural space reveals the uniqueness of the individual space.

This thesis describes the interpretation of the public quality in interior public spaces. It is intended to demonstrate whether interior space has the potential to encourage public life and to be a substitute for the outdoor public environment.

3. The activity of shopping and its relation to public space

Within the range of activities related to public spaces, the activity of shopping is a key activity. Shopping, compared to many other activities in public space, is a necessary public activity performed almost daily.

> "Although life in cities has changed dramatically in the last 100 years, opportunities for public experiences exist in sports arena, auditorium, coliseum, zoo, theme park, festival grounds, campus, transit connection and shopping mall. While public plazas incorporated into the designs of these settings are frequently used, only the shopping mall can be considered a regular part of daily life rather than an event" (Chidister, 1988, p.42).

Many public activities have become disjointed through a specialization of the spaces where they take place; they have become events isolated from other public activities. They are not part of daily life because they are separated from the street and the activities which people have to perform daily, like going to work or waiting for the bus. Shopping however, wherever it is located, remains part of daily life because it is a necessary activity almost everybody has to perform in order to supply oneself with goods.

The activity of shopping is an essential part of daily public life and has as such the potential to connect two functions:

1. It is the actual activity of exchanging money for goods, the need to buy ones goods. Accessibility and a certain selection in price and quality are the necessary conditions to fulfill this function.

2. The activity of shopping implies a wide range of resulting activities, like encounters with other people, meeting friends or simply taking part in public life. Shopping is a reason for people to go out and to perform and experience a wider range of activities beyond the actual activity of shopping.

The distribution of shopping locations, and the activities which are related to them, are a strong indicator of the state of public spaces in contemporary cities for two reasons:

1. Shopping has traditionally played a central role in the support of street life. It has attracted people to the same place at the same time and has resulted in an experientially rich environment.

2. The shop, by its definition serving the public, represents, wherever it is located, the transition from the public to the private domain. Therefore the location and distribution of shops in the urban system is an indicator of the role of indoor or outdoor public space as stage for public activities.

> "Retail development is perhaps the use most sensitive to the implications of these conditions for the city, since it provides the clearest manifestation of that elusive quality, 'life', which planners and citizens alike regard as the ultimate test of the urban environment. It does this because it is the one use which unequivocally requires and provides an open boundary between public and private space" (Maitland, 1985, p.109).

For the reasons mentioned above the activity of shopping is used in this thesis to interpret the changed public landscape in contemporary cities.

4. Internalized shopping activities and spaces

Interior public spaces, providing facilities for the exchange of goods and services are part of daily life, and part of the experience of community and publicness. However, they only offer a limited and commercially directed interpretation of the public street and the city.

Internalized retail facilities offer three distinct advantages. First, they are economically successful because they sufficiently fulfill one aspect of shopping, the possibility of exchanging goods and services. Second, they are convenient, because they concentrate shops, provide the right mix of offering, and guarantee a certain selection. Third, they are easily accessible by car; the parking lots or parkades around shopping centres indicate internalized retail facilities.

However, many aspects which support publicness are simply neglected in interior shopping malls. The success of shopping malls overshadows the change of public qualities. Riley raises

the question about the difference between consumer and society interests by pointing to the problem of loitering 'undesirables' in shopping malls:

> "Does the often noted absence of sleeping winos in suburban shopping malls really mean that those spaces are not successful environments? There might be a difference between what consumers want and what society needs..." (Riley, 1980, p.4)

The quality of shopping facilities as public space has to be measured not only in its economic success but in its contribution to the encouragement of publicness.

Thresholds between inside and outside disconnect shopping malls from exterior space. Interior malls restrict access to certain groups of people, or have limited opening hours.
Many retail places which attract customers do not necessarily offer sufficient facilities or spaces, the right environment where people can meet, talk, sit down, and enjoy the surrounding public atmosphere. The provision of spaces for these activities is often seen and treated only as superficial embellishment. Space for socializing is provided only to the extent to which these spaces support economic return. The down-playing of the need to experience public space and to socialize with other people as part of the activity of shopping ignores a central quality of publicness and public life.

> "...there is probably no urban marketplace where the interchange of news and opinions did not, at least in the past, play almost as important a part as the interchange of goods. Not indeed until the automatism and the impersonality of the supermarket were introduced in the United States in the mid-twentieth century were the functions of the market as a center of personal transactions and social entertainment entirely lost. And even here that social loss has been only partly offset by the development of the larger shopping center where, in the characteristic style of our over-mechanized age, various media of mass communication at least serve as a vicarious substitute - under the sly control of the guardians of the market, the advertisers - for direct face-to-face (two-way) communications between buyer and seller, neighbor and fellow-marketer" (Mumford, 1961, p. 149).

This means that interior public shopping places have taken over the function of the public street without offering an environment with the same degree of 'publicness'. Retail facilities internalize aspects of the outdoor streets, but often only by concentrating on the visual repetition of the outside street and not on the support of public quality considering the opportunities and constraints of interior spaces.

The evaluation of interior spaces with criteria derived from outdoor spaces identifies their potential as public spaces. In this way the opportunities and constraints to create a lively public atmosphere can be examined. Once the criteria of publicness derived from outdoor spaces are defined, the potential of interior shopping spaces to serve as public spaces can be evaluated.

5. Objectives of the thesis

Accordingly the following four objectives can be stated:

1. to describe the phenomenon of internalization as it relates to shopping (Chapter 1);

2. to define a concept of 'publicness' derived from public outdoor spaces which contains general criteria for successful public spaces (Chapter 2);

3. to define the architectural characteristics of a selected set of criteria in public outdoor space and to point out the potential interior spaces have to fulfill these criteria by analyzing them in field studies (Chapter 3, 4, 5);

4. to conclude with the description of the potential interior spaces have as public spaces (Chapter 6).

6. The scope of the thesis

Internalization is a phenomenon associated with a broad variety of buildings and activities. In order to reduce the scope the thesis is limited in several ways :

1. The analysis of public spaces concentrates only on one public activity, the activity of shopping.
2. For the examination of interior spaces three out of a range of criteria are selected and discussed in field studies. The selection is based on the idea to develop a coherent idea of interior publicness from different perspectives.
3. The case study and the selection of examples used in field studies is limited to the area of the *City of Vancouver, British Columbia*. The limitation on this area reduces a possible influence of cultural differences in the comparison of shopping centres. Also other possible differences, based on local conditions, like climate or constructional preferences which may affect interior spaces in different regions, are excluded by focusing on one particular area.

7. Methodology

The intent of this thesis is to define and develop criteria which can be used to evaluate the potential publicness of interior spaces. The research was undertaken in three distinct phases.

Phase one

This initial phase of research concentrated on the description of the phenomenon of internalization and the relation of indoor public space to outdoor public space in contemporary urban structures. Two theoretical models of settlement space were derived from the literature, one supporting outdoor activities the other indoor public activities. A case study of a downtown area in the city of Vancouver was then used to demonstrate the relationship between the two models.

Phase two

The second phase developed a theoretical framework for the analysis of public spaces using criteria derived from different theoretical concepts of outdoor public space gathered from the literature.

Phase three

In the third phase, the degree of publicness of interior shopping facilities was analyzed according to three composite criteria. These composite criteria were developed from the basic set of ideas defined in phase two of the research. The analysis of interior shopping spaces was made through visual observations and is documented in the form of architectural drawings and sketches. Unless otherwise indicated they are drawn by the author. Different sources as basis for the drawings are given unless they are not originally by the author.

8. Layout of the thesis

The thesis is subdivided into an introduction, five chapters which develop the argument of thesis, and one concluding chapter. The six chapters of the thesis are divided into two parts.

Part one

The first part contains chapter one and two. It gives an overview of the phenomenon of internalization (chapter 1) and develops the theoretical framework for the field studies by defining the term 'publicness' (chapter 2).

Part two

Part two contains the discussion of the potential public quality of interior spaces examined in field studies. It is subdivided into three chapters (chapter 3, 4, and 5). Each chapter discusses selected examples of interior spaces according to one criterion for publicness. The chapters

themselves contain three sections. The first section develops a further theoretical framework for the field studies by describing the manifestation of publicness in outdoor space under the aspect of one individual criterion. The second section examines selected examples of interior spaces according to the criterion. The third section summarizes the results of the field studies and points out the potential public quality of interior spaces under the aspect of the selected criterion .

Chapter 6 contains the conclusion.

Part I

Internalization and criteria of publicness

Chapter 1

The phenomenon of internalized public spaces with specific reference to shopping

1.1. Causes of internalization

The phenomenon of internalization describes the change from a street network with lively interaction between the public and the private territories to an urban system with the tendency to withdraw activities from public space and to isolate activities in private spaces. The causes of the process of internalization are multi-faceted:

> "It would in any case be naive to try to explain the new urban landscape in terms of a single, extraneous cause. It is clearly supported by a conscious social ideology of space, one based on the paramount values of *hierarchy and privacy*. Not only are individuals and families said to require seclusion - which does happen in traditional urban forms - but also local groups of neighbours, whole neighbourhoods, and even whole communities are also said to require it above all else - which does not happen in most traditional urban forms. The multi-level segregation of the modern urban landscape, often achieved in spite of high population densities, seems to many theorists an ideal to be aimed at" (Hillier, Hanson, 1987, p. 230).

The process of internalization is the result of direct causes and feed back processes, here referred to as indirect causes. Direct causes are factors which initiated internalization, whereas feedback processes are seen as consequences of internalization which themselves aggravate the phenomenon.

As Rapoport (1969, pp. 46 - 49) points out, socio-cultural aspects tend to determine physical or technological constraints such as climate, or construction. The cultural tendency in the Western World to isolate and separate larger activities and spaces serving these activities is a direct cause of internalization. Climatic or constructional constraints as causes for

internalization have to be seen as feedback processes because they depend on the willingness of people to accept isolated units.

The automobile, for example, often cited as the only reason for internalization, plays an important but indirect role in the contemporary city. It is an indirect cause because the promotion of the automobile could be only successful on the basis of an increasing societal individualism in the Western World. Hillier and Hanson state as one result of the "syntactic analysis of settlements" (1987) that a change in settlement structures toward internalization can be observed already before the introduction of the car:

> "The transformation began in the middle of the nineteenth century, fifty years at least before the car" (Hillier, Hanson, 1987, p. 230).

In the following three sections significant causes of internalization are emphasized, 'specialization' and 'private ownership' as direct causes, and 'the automobile' as indirect cause.

1.1.1. Specialization of spaces and activities

Specialization of spaces and activities was one consequence of the shift from the medieval economy to the new commercial economy and the process of the Industrial Revolution.

> "If one searches for a single organizing principle in the dynamics of urban development, one can do no better than settle on the process of specialization. Specialization entails the breaking up of wholes, a refinement of parts, and their realignment, in new combinations. Beginning as it does in the work sector of group life, the process spreads its effects into every distinguishable category and sphere of collective activity. And everywhere it generates similar consequences for the individual and for the social structure in which he pursues his daily affairs" (Hawley, 1971, p. 117).

Hawley is stressing that the specialization began with the breaking up of family structures, the base of the medieval economic system. Increasing individualism supports a division of large units like cities, communities, and neighborhoods into isolated smaller cells.

The result of a high specialization is the separation of different activities as well as of spaces. In former times, for example, most wooden elements were produced in one room of a carpenter's workshop. Today windows are produced in one factory, doors in another. Standardization makes it possible to order separated elements and to relate them to each other. The interchangeability of workers, a dependable monetary system, and the organization of the day into a commonly shared time system relates separate people and spaces to each other (Hawley, 1971).

The shopping centre is an example for the specialization of spaces and activities under standardized rules. It is difficult and time consuming to reach specialized shops which are spread out in a low density suburban area; therefore the new organization of shops in a centre, accessible at limited opening hours, makes shopping and encounter possible.

1.1.2. Private ownership

Another cause of the process of internalization can be seen in the tendency to create separate privately controlled public spaces.

> "The city of today is primarily a private city. Most of its open space, most of its transportation, most of its buildings, indeed most of the forces that shape it are private" (Fisher, 1988, p. 80).

The organization of the public landscape in contemporary cities is structured according to the interests of dominant private forces. Small entrepreneurs still depend on the public street as primary public activity area. Large retail chains, however, can afford to withdraw from the street and create facilities for an isolated directed public environment. The trend to withdraw from the public street enforces the separation of functions and spaces in favor of private interests.

The private ownership of public space is to a large extent a result of the increasing dominance of corporate units (Francis, 1988, pp. 54 - 56). Corporations provide and indirectly also define many needs of society including the need for commonly shared public space:

> "The influence is exerted on many fronts at once. Organizations define the functional niches individuals occupy, make the products they consume, design the services individuals receive, and regulate the terms of their participation in communal and societal affairs" (Hawley, 1971, p. 216).

The private ownership of public space has significant consequences: freedom of access and the active participation of the individual in public space is reduced. Control by private interests shapes a 'specialized publicness'.

> "The privatization movement is being advanced by private interests, which want more control over space uses and behaviors. Millions of dollars in public and private funds are involved, with substantial tax incentives being provided to developers in exchange for their assumption of the responsibility for providing public spaces. This relationship assumes at least three forms: Some cities are selling ownership of formerly public space to private developers. Management control of public spaces is being transferred to private interests. Finally, public agencies themselves are redesigning open spaces to encourage use by some groups at the expense of others" (Francis, 1988, p. 56).

1.1.3. The automobile

The automobile contributed considerably to the expulsion of pedestrians from the street. It did not expel people from the street itself but changed the dominant mode of movement from walking to driving.

> "In pedestrian cities people move through their city; in automobile cities only cars are on the streets. People and events are, to be sure, present in cars, but seen from the sidewalk, the picture is both too fragmented and too brief for one to be able to see who is moving and what is going on. The movement of people has become automobile traffic" (Gehl, 1987, p. 129).

Drivers use the street at a high speed and have a limited interest in details, whereas pedestrians can experience all characteristics on their way along the street.

The car enforced the withdrawal of pedestrians from the street in suburban and downtown areas and subsequently the process of internalization in two different ways:

(1) extension of distances in suburban areas
(2) insecurity and pollution in downtown areas

Mumford summarizes these two aspects:

> "With the destruction of walking distances has gone the destruction of walking as a normal means of human circulation: the motor car has made it unsafe and the extension of the suburb has made it impossible" (Mumford,1961, p. 435).

1.1.3.1. The extension of distances in suburban areas

The automobile significantly extended the potential movement radius of every individual. This extension resulted in a separate organization of urban parts; the suburban structure is a result of the extension of distances. Long distances in a widespread area discourage walking. Driving a car becomes the compulsory movement mode; accordingly the urban elements are car-oriented. The spatial segregation results in the specialization of urban elements:

> "The spatial dissociation of functions in suburbia results in an extreme specialization of the individual parts: segregated residence areas without local shops; segregated shopping centres without industries; segregated industrial plants without catering facilities unless provided by the management. In escaping the complex co-operations of the city Suburbia recovers the original vices of over-specialization and rigid control" (Mumford, 1961, pp. 508 - 509).

The shopping centre is a response to both the dispersal of single activity islands and the necessity to develop a car-oriented building structure: the dispersal of the suburbs made a concentration of central services in the form of a shopping centre necessary; the shopping centre in its isolated form is an optimized car-adjusted structure.

1.1.3.2. Insecurity and pollution in downtown areas

In downtown areas, where the high density and short distances would encourage pedestrian movement, the streets are overcrowded with cars. They are the predominant means of access from the suburbs. The increasing insecurity and pollution made the withdrawal of pedestrians inside buildings necessary. Existing interior spaces and a subsequent withdrawal of pedestrians from the street promote even more the use of outdoor streets by cars.

Alexander points out that the internalization of pedestrian movement spaces occurs

> ..."partly because the cars have taken over streets, and made them uninhabitable, and partly because the corridors, which have been built in response, encourage the same process" (Alexander, 1977, p. 489).

The causes of internalization in suburban and in downtown areas of North American cities are related to each other: they are both caused by the use of only one movement mode, the car, for a very wide as well as for a dense area. By introducing to downtown the same movement mode as to suburbs similar car-oriented building types become necessary. They destroy a coherent pedestrian walkway network.

If the suburban form is an "anti-urban pattern" (Mumford, 1961, p. 506), then also downtown is to some degree anti-urban with its support of the individual car and the internalization of pedestrian activities:

> "Rebuilding downtown in a suburban mold is a danger that goes beyond retail malls to civic centers, cultural centers, sport centers, and hotel/convention centers. These sort out and separate functions; they 'clean up' and 'redesign' the city fabric; and they diminish pedestrian pleasures. But they make car access easy. ... The concept of redesigning cities to accommodate the car is to redesign them out of existence" (Brandes Gratz, 1981, p. 82)

In downtown, an area of pedestrian distances, the mall destroys the idea of a mixed-use street, whereas in the suburbs the internalized mall as a centre in a widespread area still seems justified:

> "Streets ... link all the mixed functions of a city. Through the street, the connections work. A mall separates, divides disconnects, isolates. It is only appropriate, when it is appropriate at all, when it is placed in an undeveloped field where it is logically reached by car and where it doesn't intrude upon an existing physical fabric" (Brandes Gratz, 1981, p. 82)

1.2. The internalization of shopping

A central criterion for the definition of a city is its function as a transfer-point of goods and services, and as a place for meeting and socializing.

> "Of greater importance in centering the attentions of outlying residents on a town is its possession of a market and of a specialized class of traders" (Hawley, 1971, p. 6).

Four forms of retail distribution are discussed here which also mark a historical development of the retail distribution within the city:

(1) the marketplace
(2) the shop
(3) the department store
(3) the shopping centre

The four steps in the development of shopping indicate the process of penetration of public functions into the private domain and the loss of the autonomous character of public space; moreover they describe the increasing tendency of private ownership and the specialization of publicness by connecting it to private ends.

1.2.1. The marketplace

The marketplace was and in some settlements still is the traditional transfer-point of goods traded or produced in the city. It represents the city's basic function, the exchange and production of specialized goods and the exchange of agricultural products.

The market is one temporary institution in a public square which serves also other central public activities. The public authority controls private business and the provision of goods and services to citizens; it guarantees the right of access, use and participation.

The place itself is the centre of the settlement; all essential public activities are gathered and performed here. The idea of publicness gains its complexity by overlaying all public activities, all social, political, commercial events on the central square. The surrounding edges, the facades and surfaces do not only mirror one but all public functions of the city.

Some contemporary projects base their ideas on the traditional market concept. Today their function is changed; a city's economical success is not bound to activities on outdoor marketplaces; shopping is rather a 'recreational' activity in public space (Francis, 1988, p. 54).

The separation and specialization of activities and spaces allows markets to create a lively shopping atmosphere only, but not to be a space for all public activities.

The revitalization of the *Faneuil Hall* in *Boston* between 1976 and 1978 was one of the few examples of the continuation of the traditional market idea in the New World. It became a lively centre for shopping in Boston.

Granville Island in *Vancouver*, revitalized at the same time, is another example of the market idea. It connects the concept of the market with the traditional open workroom, which had disappeared with the process of industrialization.

> "The new generation of public markets is, in reality, a blend of the traditional city centre market with the modern shopping centre" (Wilson, paper on Granville Island, no date given, p. 1).

These centres in the traditional format, however, remain only isolated introverted islands. They have adapted traditional forms to contemporary needs.

1.2.2. The shop in the street

The extension and transformation of the market into the street, into locally fixed shops is a first step toward a decentralization, toward the concept of the new commercial economy, and a withdrawal of public activities into the private domain.

> "By the eighteenth century, the public markets and producer's shops of the medieval town were being converted into specialized shops under continuous operation" (Mumford, 1961, p. 438).

The exchange of goods is no longer a collective event in public space; shopping is a public activity in interior, privately controlled space.

The process of shopping is split up into two more specialized activities, the activity of movement in public space, and the activity of merchandising in private space. However, outdoor public space remains the place of encounter and active street life along shops because the location of private enterprises is directly adjacent to the public street.

The shop concept withdraws the counter, which is the only boundary between the buyer and the seller in the open market, inside an enclosed space. The wall of the building becomes the primary boundary of the shop, the counter has a secondary function.

1.2.3. The department store

The department store is an extended form of the shop combining characteristics of the market with the characteristics of the shop.

> "The department store offered the buyer the greatest possible number of wares under one roof and diversified the temptations to buy at the same time

> as it concentrates the opportunity. Thus it became in effect a many-storied marketplace" (Mumford, 1961, p. 438).

In addition to internalizing the merchandising space, the department store also internalizes the movement space into the private territory. The boundary between general movement space and specialized merchandising space is removed. Public space is no longer a space with a low degree of specialization available for a variety of activities; private space is no longer a space specialized to specific functions.

The department store dismisses the quality of public space, the interface of a variety of public activities. It is organized to enhance the interface between goods and customers, but not the interface with other public activities. In traditional settlements, all activities with any public importance were gathered in the marketplace. In today's urban structures all functions are separated and their public components remain attached to them.

1.2.4. The shopping centre

The primary characteristic of the shopping centre, originally a variant of the department store, is to counteract the mix of specialized and general functions; its intention is to separate public movement space from the shopping departments with boundaries.

> "It has often been said that a shopping centre is actually a department store in which various departments are placed in separate buildings. The truth of this statement, even though it is an oversimplification, becomes even more apparent in centres with covered pedestrian areas because of their resemblance to early department stores built around a well" (Gruen and Smith, in Maitland, 1985, p. 23).

With the demarcation of the single departments and the definition of pedestrian movement spaces with vertical boundaries, a formal analogy to the outdoor city is created. The departments become shops, the pedestrian movement spaces resemble the street space, and

consequently the shopping centre is an 'internalized outdoor world'. The street analogy is an attempt to redefine the public collective and social character of the street, but in a privately controlled and directed environment.

In regional towns the traditional 'Main Street' lost customers because shopping centres at the entrance to the city attracted more and more people. The malls became a substitute for the Main Street-concept:

> "The mall not only acted like a Main Street, it was designed to be one. But not the real one - an archetypal Main Street, designed to fulfill wishes and longings and to alley fears"... (Kowinski, 1985, p. 68).

One consequence of the introversion of shops is a reduction of multiple-use on the outside streets. The interior mall becomes a competing pedestrian street or even a substitute for the outside public street. However, the mall serves only a limited range of activities in a specialized way; it is a pedestrian environment organized according to the most economical exchange possible.

> "Unfortunately ... the emphasis has shifted too often to multi-use *structures*, which do not necessarily result in lively, multi-use *streetscapes*. Often large mixed-use structures that look good in zoning maps because they appear to bring a lively mix of activities to the city have a deadening effect on surrounding streetscapes. This happens where retail uses are located within private development, with shops oriented to an interior mall" (Eichner, Tobey, 1987, p. 277).

In summary, it can be stated that the transformation of shopping develops in the following four steps:

1. A concentration of all activities with a public component in one or few public outdoor spaces (the marketplace).

2. The separation of public activities into movement and local activities; public space becomes primarily movement space; the local, specialized activities are dispersed and introverted into buildings (the shop in the street).

3. Specialized, local activities are grouped into larger units and concentrated inside and overlaid with pedestrian movement space (the department store). The function of outdoor public space is reduced to vehicular movement space. The interior situation is a specialized analogy to the outdoor situation described in the first step, the marketplace.

4. Interior local activities are separated from movement spaces (the shopping centre). The interior organization is a specialized analogy to the outdoor situation described in the second step, the shop in the city.

The conceptional approaching of interior specialized shopping solutions to the traditional exterior idea indicates the need for an adequate interpretation of publicness under contemporary conditions.

The analysis has shown that the four types of retail distribution can be divided into two groups. The first, which includes the concept of the 'marketplace' and the 'shops in the street', supports public activities in the street. The second, including the concept of the 'department store' and the 'shopping centre', supports public activities inside buildings. In the following section the two groups are subject to further analysis.

outside	inside
marketplace	department store
shop in the street	shopping centre

Figure 1.
the two groups of retail distribution

1.3. Internalization and the distribution of public space

The process of internalization undermines traditional urban structures which support outdoor public activities. It creates building types which attract public activities inside. The consequence for many urban structures is the destruction of the coherent activity and movement network into piecemeal local indoor and outdoor activities.

1.3.1. The externalized and the internalized model

In this section two concepts of space organization, are described, one supporting outdoor activities and one withdrawing activities inside buildings.

Rapoport describes the two concepts of space organization as follows:

> "There have generally been two traditions of concentrated settlement. In one the whole settlement has been considered as the setting for life, and the dwelling merely as a more private, enclosed, and sheltered part of the living realm. In the other the dwelling has essentially been regarded as the total setting for life, and the settlement, whether village or city, as connective tissue, almost 'waste' space to be traversed, and secondary in nature. This distinction is stated here in extreme form and is greatly simplified. Between the two types described is a whole range with different amounts of use of the outside space - but the general distinction does hold" (Rapoport, 1969, p. 70).

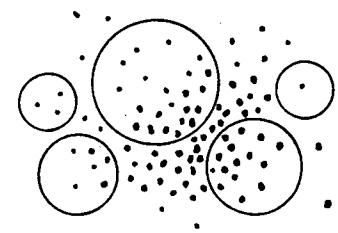

Figure 2.
The first type of concentrated settlement
Source: based on Rapoport, 1977, p. 92

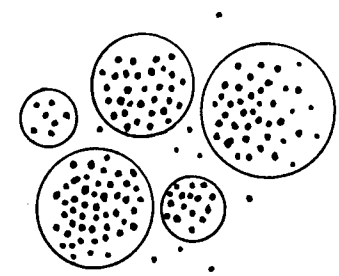

Figure 3.
The second type of concentrated settlement
Source: based on Rapoport, 1977, p. 92

According to Rapoport, figure 2 shows the private, enclosed and sheltered domains, symbolized with a circle, and the public domain outside the circles. All activities are equally distributed over public and private space. Figure 3, however, concentrates most of the activities within the private domain.

In the first model activities take place equally in the whole settlement; they are divided into public and private activities. Private activities take place in houses, whereas public activities occur outside buildings. The major characteristic is the continuum of public. liveliness in the public area resulting from the many public activities taking place in outdoor space. Directly adjacent private territories support the continuum of public liveliness by facilitating public activities in the street rather than inside buildings. This system is referred to as the *externalized or extroverted model,* because public outside spaces are the place for public activities; public activities which are performed in the private domain are directly adjacent and accessible to public outside spaces.

The second model describes a settlement structure where outside space connects isolated buildings which promote public activities inside. Outdoor public space loses its autonomous character as primary carrier of public activities. This system is referred to as the *internalized or introverted model* because the buildings tend to internalize both, public and private activities.

Figure 4 and 5 amplify distinctions between public and private space in the two models.

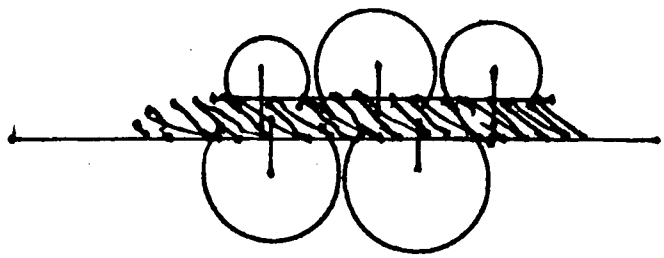

Figure 4.
the externalized model: the private building symbolized with a circle is directly adjacent to public space and generates street activities by people moving in and out

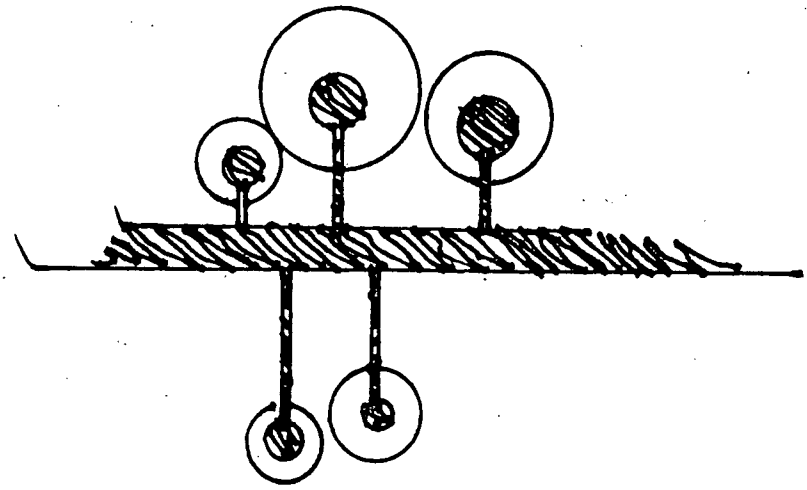

Figure 5.
the internalized model: public space is extended into the private sphere, the building; public spaces become disconnected and specialized

1.3.2. Case study of a selected area in downtown Vancouver

In the analysis of the distribution of public space, shopping serves as vehicle to illustrate the overlay of the internalized and externalized model for public space. Shopping represents a critical interface between the private and the public domain and can therefore trace the characteristics of the two models in terms of the different treatment of public space.

Shops are referred to as spatially defined units which sell goods or offer services with the interest to reach a wide range of customers.

Although the distinction between the two models can be defined theoretically, urban structures cannot be categorized that clearly. In modern or historical cities tendencies towards both an internalized or an externalized structure can be identified.

To demonstrate the overlay of both models and the consequences for the movement network, an area of six coherent city blocks in downtown Vancouver is chosen (see appendix on page 118). Figure 6 shows the ground floor level of all buildings (ignoring the slope towards Dunsmuir street).

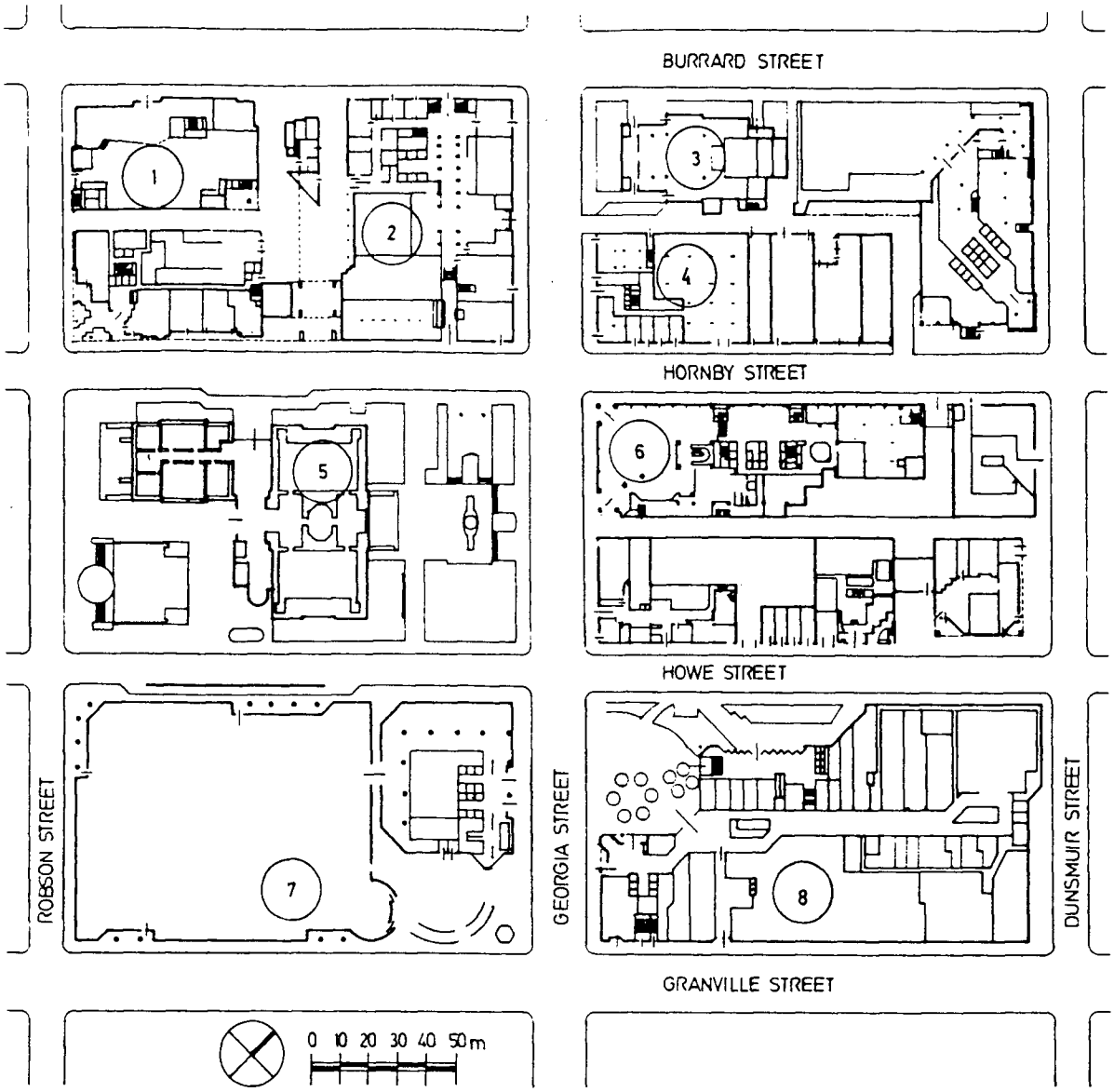

Figure 6.
The case study area: ground floor plan of six downtown blocks in Vancouver between Granville and Burrard, and Dunsmuir and Robson street; the numbers in the plan mark the following buildings:

Public Library	*(1)*	*Vancouver Art Gallery*	*(5)*
Hotel Vancouver	*(2)*	*Hong Kong Bank*	*(6)*
Cathedral	*(3)*	*Eaton Department store*	*(7)*
Medical Dental Building	*(4)*	*Pacific Centre Mall*	*(8)*

The buildings within the area serve a wide range of public functions. According to the degree of specialization of publicly accessible services, four categories of buildings having progressively decreasing specialization can be identified:

1. Private offices and office towers give access only to owners, tenants and their customers.
2. The *Cathedral* (3), the *Public Library* (1) and the *Art Gallery* (5) offer free access to everybody, but attract only specific groups.
3. The *Eatons Department store* (7), open ground floors of high-rises, and the hotels, as for example the *Hotel Vancouver* (2), attract a wider range of different people through the offer of a wider range of goods and services.
4. The indoor street of the *Pacific Centre Mall* (8) is an area of a low level of specialization attracting the widest possible range of people.

Figure 7 highlights only the shops as indicators of the location of the transition between private and public space, the overlay between the externalized and the internalized model is visible.

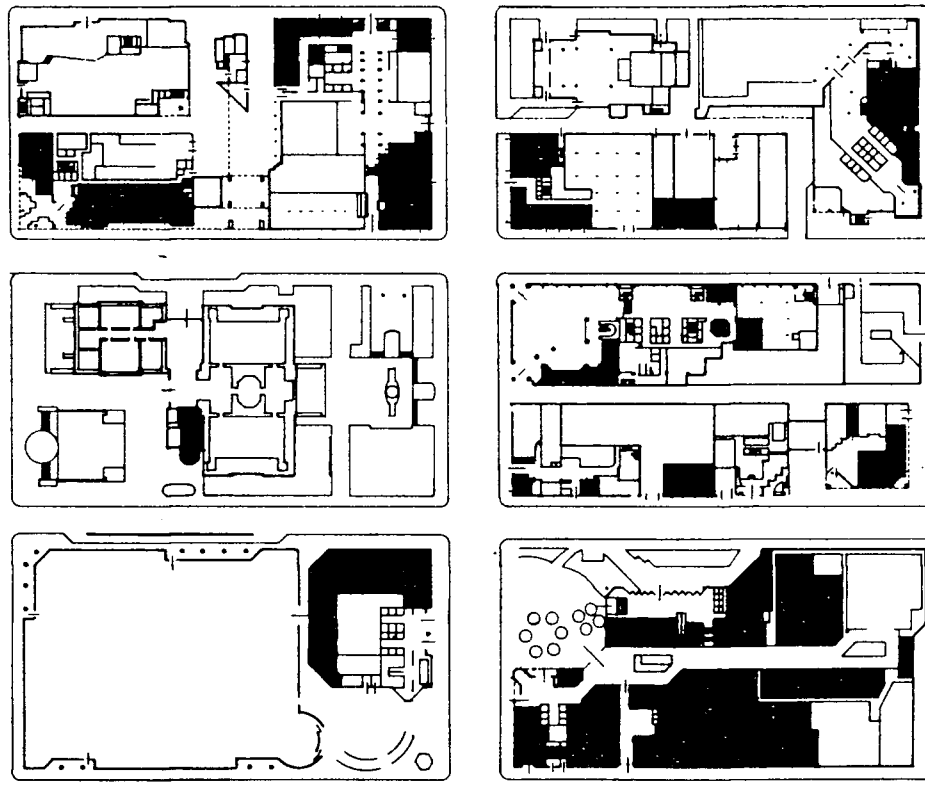

Figure 7.
Location of shops (marked in black) in the selected downtown area

The shops marked in figure 7 can be distinguished into three types according to their different location (excluded from the definition is the department store, which has a special position in the analysis because its departmental differentiation is not expressed with boundaries):

1. Shops facing the outdoor street and supporting the externalized model by generating outdoor pedestrian movement.
2. Shops facing an inner centre or movement space, representing the internalized model by attracting people into indoor spaces.
3. Shops facing the outdoor street as well as an indoor movement area, supporting both the internalized and the externalized structure.

1.3.3. The consequences of internalization for the distribution of public spaces

In order to interpret the overlay of the internalized and the externalized urban structure, the conclusion of Hillier and Hanson's "syntactic analysis of space" (1987) and their distinction of traditional and modern settlements serves as guideline.

The conclusion describes four differences between the externalized model of traditional settlements and the internalized model of the contemporary city. The juxtaposition of the contrary concepts can be summarized in four characteristics:

(1) the dispersal versus the alignment of entrances
(2) the breaking up versus the continuity of sightlines
(3) the segregated versus the integrated structure
(4) the purely local versus the global and local structure

1.3.3.1. The dispersal versus the alignment of entrances

> "Instead of continuously relating space to building entrances, entrances are clustered with "unconstituted" zones in between. Instead of keeping space axially shallow from the outside, space is made deep, especially where the building entrances are to be found" (Hillier, Hanson, 1987, p. 230).

In the externalized model entrances into buildings lead directly from the outdoor street into a shop or building. These entrances are equally distributed along street space and maintain a permanent interaction between building and street by pedestrians. The interaction enhances the probability of street life. One example in the plan is the *Medical Dental Building* (4) at the north west corner of Hornby and Georgia street (figure 8).

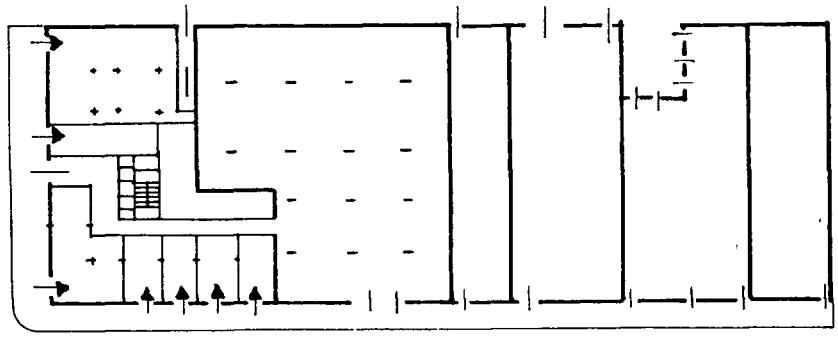

Figure 8.
Medical Dental Building: ground floor plan
Source: City of Vancouver, Planning Department

The internalized structure, however, withdraws entrances to shops or other publicly accessible units from the street and brings them deep into the buildings. The *Hong Kong Bank* (6), for example, provides on the ground floor several shops which are only accessible through an open indoor hall, many steps away from the public street (figure 9).

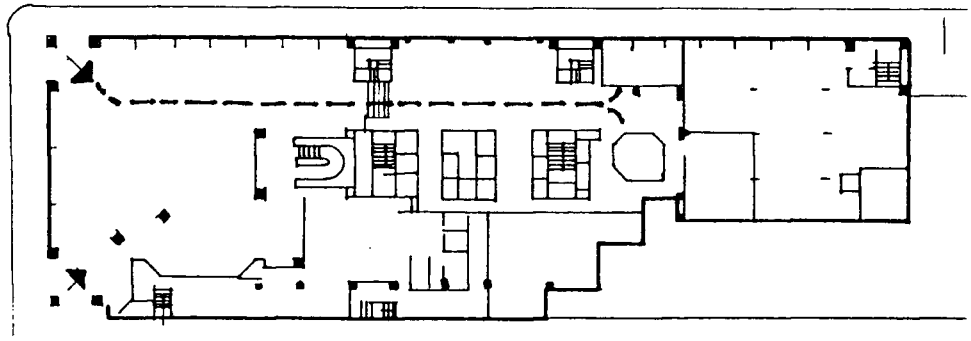

Figure 9.
Hong Kong Bank: ground floor plan
Source: Administration Office, Hong Kong Bank

1.3.3.2. The breaking up versus the continuity of sightlines

> "Instead of making strong axial lines penetrate to the heart of the system, lines are shortened as we go deeper, creating a kind of spiral effect" (Hillier, Hanson, 1987, p. 230).

This criterion refers to the argument that a strong connection between spaces in the urban context is the axial sightline.

The externalized model orients all entrances along spaces which are connected by sightlines. In figure 6 the grid system provides the sightlines; the connection of all individual spaces along sightlines indicates a clear coherence in the urban structure.

The buildings following the internalized model, however, arrange the entrances of individual units and sub-units away from the street. They tend to disconnect the street and the entrances not only spatially but also by breaking up sightlines. One example is the entrance to the *Pacific Centre Mall* (8) from the *IBM Plaza*. The axis from the outside of the *IBM Tower* is extended into the mall; the entrance, however is shifted diagonally to the plaza and therefore disconnects the inner from the outer movement system.

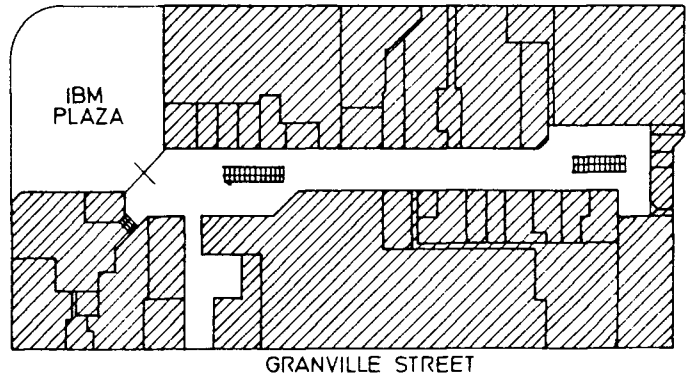

Figure 10.
Pacific Centre: the access from the IBM plaza
Source: Administration Office, Pacific Centre

The deeper one follows into the core of internalized structures the more the axes are broken down into shorter lines and tend to specialize the spaces. The *Honk Kong Bank* (6), for

example, leads at its very end to a few shops, which are disconnected from the street, because the customer has to change the direction several times (see figure 9).

1.3.3.3. The segregated versus the integrated structure

> "Instead of integrated but deformed grids we have more segregated, even tree like structures" (Hillier, Hanson, 1987, p. 230).

The degree of integration is a crucial criterion for the distinction of externalized and internalized structures.

Integration is referred to as coherence of public spaces achieved by the location of entrances directly adjacent to public space, a coherent movement network and axial sightlines which give a clear overview over the structure of public spaces.
Segregation is referred to as discontinuity of public space achieved by withdrawing entrances deep into the private territory, and by the lack of sightlines which connect single public space elements.

An urban structure consisting of buildings following the externalized model, like the *Medical Dental Building* (4) reinforces pedestrian movement by the entrances along the street (see figure 8).
In an orthogonal grid system all street spaces are of equal size and the attraction of different streets depends on the shops and services offered at every street. A deformed grid system, however, as described by Hillier and Hanson, creates a hierarchy among the streets; it makes one street more public simply through an extensively long sightline. Others tend to be more private because the sightlines are broken down into shorter distances (figure 11). The transition from more public to more private streets is generated by an axial differentiation.

Moreover the grid keeps up circular movement systems and is never extended into dead-end streets, which are more private because they are subject to a stronger control by adjacent buildings and are used only by people with a clear purpose in mind.

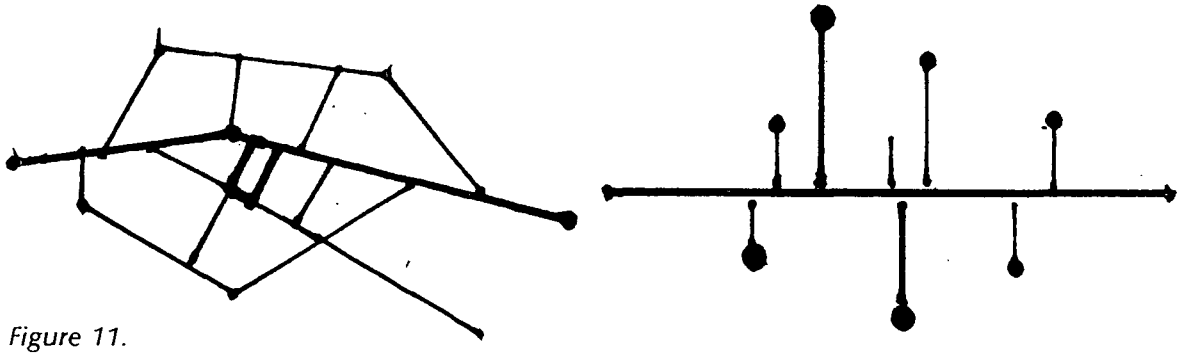

Figure 11.
the deformed grid and the dead-end street concept: the deformed grid differentiates public and private streets with longer and shorter axial lines connected to rings; the dead-end street concept creates private spaces by branching into smaller arms

The internalized model supports the dead-end street concept in the differentiation of public and private spaces (figure 11); people move from a general system to a specific space always towards a more private end. In the case of a shop visit in the *Pacific Centre Mall* (8), one comes along the street and crosses the plaza, which is already more specific because it serves only one main entrance and two subordinated entrances; then one enters the mall and has finally access to a whole range of shops.

The spatial sequence of the different access concepts can be graphically presented as follows:

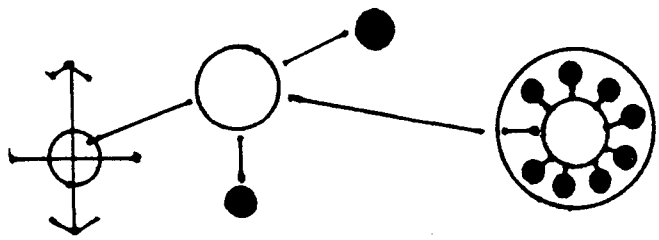

Figure 12.
Access from Georgia Street to the Pacific Centre: coming from the street to the plaza, and from the plaza into the shopping centre

In comparison with the tree-like organization of the internalized model the externalized model shows a ring system with entrances leading to every single space.

1.3.3.4. The purely local versus the global and local structure

> "Most of all, instead of global structures we have a kind of localization principle: everything is invested in what the local spaces are like, and little attention is given to the global system per se" (Hillier, Hanson, 1987, p. 230).

The fourth point concludes the consequences for public space. The externalized model consists of an easily identifiable global structure of public space.

Structures are referred to as global if they show a spatial organization which gives people at every point within the movement system a clear understanding of their present location and an idea about the structure and size of the whole movement space system.

The street structure is a coherent network of publicly accessible space; streets with long axial sightlines serve mainly the through movement of a wide range of people and show therefore more public street life. Streets forming shorter axial connections are more used by the inhabitants of the area for local activities.

Local activities are referred to as street activities which are confined to a small area within the street, sometimes spatially defined.

The internalized model, however, shows individual islands which tend to create their own specialized piece of public space within their own boundaries. The public continuum is disrupted and public space is dispersed over the private islands.

The inconsistency of the urban structure within the area of this case study is caused, as shown above, by the contradictory overlay of the two concepts, the externalized and the internalized model. This opposition diminishes the overall quality of the streets; it leaves some pedestrian activities at a few places along the outside streets and withdraws some from other outdoor

places inside buildings. The traditional outdoor continuity becomes a discontinuous inside-outside competition.

In summary, the impact of the process of internalization on public pedestrian spaces for many North American cities can be described as follows:

1. Public spaces are distributed and divided into indoor and outdoor spaces.
2. Public spaces are isolated from each other and do not contribute to a coherent pedestrian movement and activity system.
3. Public spaces are specialized and are mainly under private control.
4. Public spaces are places for special events and not part of daily life.

1.4. The relation between indoor and outdoor public spaces

Interior public spaces draw activities from the outside street to the inside of buildings. In their isolated organization of a pedestrian environment, they provide a selective analogy to the outside street and even to the whole city.

The observations of both pedestrian activities and the architectural framework for these activities suggest strong similarities between interior public spaces and the exterior city. Maitland (1985) points out pervasive similarities of interior movement patterns with contemporary design proposals for pedestrian-oriented structures. He concludes:

> "This notion may seem absurd and paradoxical. After all, it is the anti-urban and insular character of the modern shopping centre which raises the whole question of its relationship to the city. And if such references to urban patterns and components can indeed be recognized in retail forms, it is apparent that they amount to a highly selective reading of the city as a model, at least as it appears today" (Maitland, 1985, p. 115).

1.4.1. The outdoor-indoor analogy and its characteristics

Maitland describes the traditional urban structures before the Industrial Revolution as structure analogous to interior public shopping spaces. Both are formed according to the needs of pedestrians.

As in any analogy, although there is a coincidence between analogous elements, the differences in other characteristics can still be significant. The relation between the real city and the analogy inside buildings can be described in three characteristics. Each of them immediately indicates the limits of the analogy:

(1) Counteraction
(2) Inter-dependence
(3) Mutual stimulation

1.4.1.1. Counteraction

Interior pedestrian spaces with public services are a counteraction to the outdoor public street, which is primarily determined by the fast movement of cars. These two environments counteract each other. Pedestrian and car movement spaces co-exist, but each encourages specific environments; the one supports that which the other expels. Under this aspect, the analogy of the interior space remains a selective one because it gathers qualities which the contemporary exterior street no longer provides. The analogy describes the relation between contemporary interior public spaces and a traditional outdoor space which was shaped in a time before the automobile. In traditional settlements pedestrian interests still are dominant.

1.4.1.2. Inter-dependence

The internalized and the externalized model are inter-connected insofar as their mutual exclusiveness renders both of them necessary. If more streets indicated the successful overlap of automobile and pedestrian, the separation of an interior pedestrian domain and an exterior

car domain would become less necessary. But since interior public spaces serve pedestrians, the exterior can be exploited by vehicular dominance.

> "And if they persistently return to nostalgic images of the town as a legible, charming, safe, clean and sociable public place, it may be because the real town outside is often the opposite of these things. The dream exists because so also does the nightmare" (Maitland, 1985, p.91).

1.4.1.3. Mutual stimulation

The interior mall represents an implicit comparison to the exterior shopping street. The ideal of the outside street dominates the concept of interior malls because there exists an associational bridge between interior and exterior spaces. On the other hand, the realized ideal inside serves as measurement for exterior improvements. The city analogy can be reversed: the ideal of the outside pedestrian movement space are the malls whereas the ideal of the inside is the complex publicness of the outside street.

Seen under these three aspects, every successive step reveals more and more contradictory facets in the relation between interior and exterior public spaces. These contradictions are the underlying characteristics of this analogy.

1.4.2. The analogy of outdoor features in interior public spaces

Activities and their functions taking place in outdoor public space determine the organization and form of outdoor spaces. The internalization of outdoor activities inside buildings implies an organization of interior spaces which is analogous to outdoor spaces because the functions are not changed.

Interior spaces interpret conditions of exterior space with their available possibilities. Hereby it can be observed that the design of interior spaces includes the spatial conditions of the interior to different degrees. Interior public circulation space can be designed as 'outdoor'

space by imitating outdoor conditions; but it can be also interpreted as 'outside' space, space outside the shops.

The concept of imitating outdoor conditions while providing interior comfort is pointed out in the statement of Gruen:

> "The underlying purpose of the enclosed mall is to make people feel that they are outdoors - to provide psychological as well as visual contrast and relief from indoor shops - yet at the same time they are provided with the comfort of air conditioning, the chance to sit down and rest a while, and the visual enjoyment of landscaping, fountains, and sculpture" (Gruen, cited in Hornbeck, 1962, p. 165).

Accordingly, the different definitions of interior public circulation space as 'outdoor space' or as 'outside space' develop the analogy from different points of view.

The internalization and interpretation of three outdoor characteristics can be observed:

(1) Spatial conditions
(2) Environmental conditions
(3) Outdoor symbols

1.4.2.1. Spatial conditions

The definition of interior public circulation space as analogy to outdoor public streets is based primarily on the analogy of spatial conditions.

The central spatial characteristic of public space is the boundary between public and private space (Jackson, 1970, p. 154). The facade between shop and street is the basis for all further distinctions of public circulation space and individual shop space.

The differentiation of circulation space and shop space with a higher ceiling is another example for the analogy to outdoor public spaces. The contrast symbolizes the open sky above outdoor spaces. Different forms of vaults support this impression.

1.4.2.2. Environmental conditions

Interior public circulation space can be defined by exposing it to outdoor environmental conditions. A common solution are interior shopping arcades with glazed roofs. Open entrances without doors result in the same temperatures inside and outside the mall. Accordingly, the interior public space has outdoor characteristics, like temperature, sun, and shadow. The more the direct access of outdoor climatic, light, and temperature conditions is filtered out and substituted by interior interpretations, the more the space develops an environmental analogy to outdoor space. A ceiling illuminated with indirect artificial light, for example, creates an analogy to a bright sky.

Environmental conditions can also be expressed by symbols. The roofs on shop facades, for example, are an indicator for the climate. However, these symbols serve primarily as signs for the merchandise offered in the stores.

1.4.2.3. Outdoor elements

Elements of outdoor spaces which are internalized inside buildings can become symbols of outdoor public space. Trees inside buildings, for example, can be indicators of public outdoor space. The repetitive arrangement of trees and park benches in a mall supports the effect of 'outdoorness'. Another example of internalized outdoor symbols are surfaces, such as shop facades or floor surfaces. A third example of internalized symbols are outdoor objects, such as park benches, lanterns, sunshades, or water fountains. The design of these items supports the analogy of outdoor space either as imitations or interpretations.

In summary, the internalization of outdoor public activities creates an interior analogy of outdoor public spaces, forms and details. The analogy can range from an imitation to an interpretation of outdoor spaces. Outdoor details are often used not only as symbols of outdoorness but as symbols for the quality of the offered merchandise.

The provision of symbols of outdoor space inside buildings alone does not necessarily encourage public liveliness. In the following chapter a set of criteria is developed to evaluate the public quality in interior shopping facilities.

Chapter 2

Criteria for publicness derived from exterior spaces

In this chapter the criteria for 'publicness' are defined which serve as a basis for the analysis and evaluation of indoor pedestrian spaces. It is assumed that successful outdoor pedestrian spaces show certain general criteria which can be applied to all public spaces whether they are inside or outside buildings. The manifestation of these criteria varies depending on the conditions of the specific environments.

2.1. Street activities and culture

People on the street and a variety of street activities are the basis for public street life. Gehl divides activities into three types:

> "Greatly simplified outdoor activities in public spaces can be divided into three categories, each of which places very different demands on the physical environment: *necessary activities, optional activities* and *social activities*" (Gehl, 1987, p. 11).

'Necessary activities', according to Gehl, are activities which people have to perform in public space. Going to work, waiting for the bus, or shopping traditionally take place in public space whether the support for these activities is emphasized or not.

'Optional activities', like strolling, watching people, or sunbathing require a corresponding environment; the environment has to be stimulating and safe for strolling, people can be watched only where they are, and a sunbath needs sun and a place toward the sun to sit down and rest. 'Social activities' depend on the presence of other people in public spaces.

> "These activities could also be termed 'resultant' activities because in nearly all instances they evolve from activities linked to the other two activity categories. They develop in connection with the other activities because people are in the same space, meet, pass by one by another, or are merely within view" (Gehl, 1987, p. 14).

This interpretation of activities implies that when the criteria of optional activities are enhanced also socializing activities are enhanced. The primary aim for the improvement of public spaces is therefore the provision of criteria for a variety of optional activities.

In the description of pedestrian street use, Rapoport (1987) points out that the degree of street activities depends on cultural values. Cultures develop rules which make certain activities on the street acceptable or unacceptable. In some countries, for example, the performance of public demonstrations or religious rituals is part of daily life; in other countries these activities are performed in buildings or not at all. In the former case people may be used to take part in street life and in the latter the public street may be not an important part of the public living realm. The emphasis of the cultural aspect indicates that architectural features cannot automatically generate street life. However,

> "environments, while never determining positively, (they cannot *generate* behavior), can be so inhibiting as effectively to block behavior - in this case the pedestrian use of space - and thus can be negatively determining" (Rapoport, 1987, p. 83).

The streets in North American cities facilitate mainly the movement of cars, which creates a hostile environment for pedestrians. Car access to public space plays a central role in the value system of society. However, where the use of cars is restricted locally, as for example on *Granville Island, Vancouver*, a lively atmosphere for pedestrians is provided and street activities take place. This example indicates that despite of the existing value system in single solutions, the conditions can be changed by strengthening the position of pedestrians.

The function of public outdoor spaces and their importance for society is subject to a continual change. As cultural values change, so does the public streetscape in form, function, and meaning (Chidister, 1988, pp. 40 - 42). However, although the ideas about co-existence in space, the private and public interest in public space may change, the general fact that people tend to socialize and need adequate spaces for this activity remain unaltered.
There are infinite ways of creating public spaces; however, since they serve as gathering points for people, some rules can be identified which makes them successful or unsuccessful.

2.2. Concepts of publicness

Publicness is in this thesis defined as social liveliness of public spaces. The public quality depends on the success of public spaces. Success, however, can be measured according to different criteria.

Whyte's starting point for successful spaces is the amount of people using it. He states under the key-word *self-congestion*: "What attracts people most ... is other people" (Whyte, 1980, p. 19). Therefore the more people use a specific public space the more publicness is accomplished. He points out that appropriate design, management, and location of public plazas are the central criteria for their success. As a major design issue, for example, Whyte stresses comfortable seating and a sufficient amount of seating places. The management of public spaces can enhance the public use by supporting performances, speeches, and concerts (Whyte, 1980, pp. 94 -98). The location of public spaces supports frequent use, if the spaces are directly connected to daily activities (Whyte, 1980, pp. 58 - 59).

Gehl (1987) takes Whyte's point of measuring success with the amount of people using a space further; he believes, it is not only important how many people take part in public spaces, but also how long their duration of stay is.

> "In connection with the effort to give the positive processes a chance, it is important to note that life between buildings, the people and events that can be observed in a given space, is a *product of number and duration of the individual events*" (Gehl, 1987, p. 79).

In Gehl's interpretation of publicness the self-reinforcing process of different activities plays a central role:

> "When someone begins to do something, there is a clear tendency for others to join in, either to participate themselves or just to experience what the others are doing. In this manner individuals and events can influence and stimulate one another" (Gehl, 1987, p. 75).

Francis (1988) bases the idea of successful public spaces on the concept of the democratic street:

> "Incorporating some aspects of pedestrian and livable streets, the concept of democratic streets is grounded on the notion of public use. It recognizes streets as playing larger social, economic, and ecological roles in towns and cities. ... Publicness is the foundation of street democracy, providing the framework in which a true public culture can develop and flourish" (Francis, 1987, p. 28).

The main focus of Francis' approach lies in the political statement which is implicit in the organization of public space. The direct interface among people on the street, is one way in which society develops specific forms of co-existence. Street democracy is accomplished, according to Francis, if everyone has equal rights, for example, to use, participate, control, and modify public spaces. The political aspect of publicness is, according to Francis, closely intertwined with social liveliness of public spaces.

Also Lynch stresses the relation of social and political aspects for publicness. Presenting common concepts for publicness he summarizes their criteria as follows:

> "... increased interaction, particularly between ages, classes and races; intimate or stimulating encounters; privacy and repose; liveliness, vitality, and a sense of being at the center; the ability to see and be seen; or an enhanced sense of personal identity. The freedom to act and to move about, individual choice; self-help, autonomy, equity, and diversity appear repeatedly. So do issues of behavioral control, or freedom from it, as well as participation and the democratic process" (Lynch, 1981, p. 362).

Lynch points out his view about activities in public space and the criteria which should determine publicness by defining five basic territorial rights. According to Lynch, "man is a territorial animal" (Lynch, 1981, p. 205). The following rights people can claim in private territories for themselves have to be shared in public space: the right of presence, of use and action, of appropriation, and of modification and disposition (Lynch, 1981, pp. 205 - 207). The term 'right' indicates the connection of social criteria with political values. The assumption that everybody has the right to be present in, to have access to, or to use public space, goes beyond the demand to create spaces adequate to socializing activities.

2.3. Selected criteria of publicness

Given the different aspects of publicness the thesis focuses in the following on a selected set of criteria for publicness. The selection of the following six criteria implicitly define the term publicness.

(1) accessibility
(2) user and use diversity
(3) participation/ modification/ control
(4) comfort
(5) challenge/ exploration/ unexpectedness
(6) orientation

The individual criteria cannot be seen separately; they overlap and express one common idea of publicness. Spaces with restricted access, for example, also reduce the use and user diversity. Challenge and exploration in public spaces is reduced if the access of different users is limited.

The thesis concentrates the term publicness on these selected criteria for the following reason:

The intention of the thesis is to show the potential of interior spaces to serve as public environments. The selected criteria focus on characteristics of public space which are supported by the fact that public space is outdoor space. The analysis of public interior spaces shall indicate in which way indoor spaces with their limitations can fulfill these criteria. For example, interior spaces usually give limited access, or reduce the use and user diversity; they build enclosed and disconnected spaces. The focus on outdoor characteristics which are different from indoor spaces can reveal the limits or the potential of interior spaces to serve as public spaces.

2.3.1. Accessibility

The access to public space is the prerequisite of public liveliness. People have to be able to go to places where other people are. Lynch stresses the access to other people and human activities as key condition in a city:

> "Most basic, perhaps, is access to other people: to kin, to friends, to potential mates, and to a variety of more casual acquaintances. Human beings are social animals, and frequent contact, at least between members of a primary social group, is fundamental to their well-being" (Lynch, 1981, p. 188).

Whyte points out the common problem in contemporary cities that the use of many public spaces is restricted by private ownership:

> "How public are public spaces? On many plazas you will see a small bronze plaque that reads something like this: PRIVATE PROPERTY ... It seems clear enough. It means that the plaza is the owners', and he has the right to revoke any right you may have to use it" (Whyte, 1980, p. 64)

Access to public spaces can be restricted in several ways. It can be restricted in time; the access to a public park, for example, can be limited to certain opening hours.

Access can be also limited to a certain group of users; heavy vehicular traffic, for example, can make it impossible for pedestrians to use a public street; on the other hand, pedestrianized areas can prohibit the access by car. A space specialized to the use of one group of users reduces the degree of publicness, of openness to the public. Therefore

> "one way of categorizing public landscapes is to distinguish between 'accessible' and 'inaccessible' rather than simply 'open' and 'closed'. Projects can be evaluated by degrees of accessibility for different users rather than by purely aesthetic or use-oriented criteria" (Francis, 1988, p. 58).

2.3.2. Use and user diversity

Access to public spaces alone does not provide public quality; public space must be open to a diversity of uses and users to create a rich experiential environment. Appleyard lists six groups of different users of a street who all develop individual interests: travellers, bystanders, public agencies, residents, engineers, and urban designers (Appleyard, 1987, p. 9).

User groups often develop strategies to realize their own interests as participants in public street life; shops, for example, try to attract customers, but try also to reduce the influence of other shops on their business. The success of a street depends on the ability of its users to create a lively balance of uses and interests.

Jackson describes the conflict between one-sided uses and the idea of publicness with the example of the commercial strip:

> "The road as an economic (or tourist) facility is thought of in terms of its economic returns; it is accordingly designed and located with a particular traffic in mind, and it is to the interest of its builders to encourage that kind of traffic. In a sense it is a public utility, operated by the state for the benefit of its chief users, like the gas and the telephone companies. There is nothing wrong in this kind of road, and we are building more and more of them. But the public road as a social installation has quite a different character. It is built because it will encourage unity, because it will bring citizens together" (Jackson, 1970, p. 156).

Contrary to interior space, in public outdoor space activities are typically not separated by strong boundaries. All activities within public spaces are related to each other and create a use diversity. This inter-relation of uses is manifest in two ways, in a low degree of protection and a low degree of specialization.

Low degree of protection

Activities in public space are not typically protected by physical boundaries. Low degrees of protection may separate the automobile from pedestrian sidewalks with a curb, or a pedestrian crossing may be protected by a traffic light; sitting people may be protected to some degree by trees from passing pedestrians.

Low degree of specialization

Public spaces are open to a variety of uses. In order to provide this variety the spatial organization shows a low degree of specialization. Contrary to interior spaces, where individual functions are separated in individual rooms public space has to serve overlapping functions. The street can be used by street cars and automobiles; but it also can serve at another time for parades or demonstrations. Also details in public space have a low degree of specialization in order to serve several functions. Public stairs, for example may serve as movement space as well as space for sitting or playing.

2.3.3. Participation, control, modification

Participation is a condition which supports the identification of users with their environment. The more reasons people have to use public space the more they will participate in street life (Gehl, 1987, pp. 115 - 121). The activity of shopping is a typical reason, sometimes an excuse for the use of public streets and the participation at street life:

> "The fact that adults who work at home on an average spend nearly three times as much time shopping as those who work outside the home, and the fact that the shopping excursions are distributed evenly throughout the week, even though shopping once a week would perhaps be easier, make it natural to assume that the many daily shopping excursions are not only a question of getting supplies" (Gehl, 1987, pp. 117 - 119).

A direct form of involvement and participation in public space is 'control' over spaces:

> "Users of a space must maintain direct control of places, making them 'ours' as opposed to 'theirs'. To involve users in daily management decisions, guidelines should provide means for negotiation, among users and with space owners and managers, on a continual basis" (Francis, 1988, p. 58).

Participation implies that individuals take responsibility for spaces; people can be personally present and control public space; but they can also symbolize their presence in the street, for example, with a high degree of maintenance of adjacent private areas, or with territorial markers. One condition for control is the direct adjacency of entrances to the public street (Hillier and Hanson, 1987, p. 224). Only people who are able to see what is occurring in public space can participate spontaneously.

Another form of participation is the 'modification' of public space by people. Shoveling snow on the street is a typical example for the individual modification of public space (Gehl, 1987, p. 121).

Whyte stresses a small detail, the chair, which allows people to modify public space:

> "Now a wonderful invention - the movable chair. Having a back, it is comfortable; more so if it has an armrest as well. But the big asset is movability. Chairs enlarge choice: to move into the sun, out of it, to make room for groups, move away from them" (Whyte, 1980, p. 34).

The low degree of specialization in public space motivates people to improvise. Some niches, some stairs, a tree, motivate people to gather, to sit down. The more public spaces provide spaces for isolated functions or ready-made elements, the more people perform only pre-designed activities. Participation, together with the possibility to modify, to adjust, to change, and to control, makes lively public spaces.

2.3.4. Comfort

In order to attract people, public space must offer a surrounding which responds to a variety of potential activities. When people find a place in public space which encourages the particular activity they have in mind, they feel comfortable and may even identify themselves with the space.

> "Synomorphism is a concept that refers to the fit between a physical environment and that environment's proposed purposes ... . *Fit*, in this sense, means, first, that certain desirable behavior is not precluded by the environment of the streetscape and, second, that the environment, to the extend possible, encourages such behavior" (Eichner and Tobey, 1987, p. 282).

Comfort is achieved if a space responds adequately to the activities which take place there. However, the variety of potential activities and the often changing behavior of people suggest that elements which provide comfort are flexible. It also suggests that people who use public space have to show some flexibility in the use of public space. Accordingly, comfort in public space is not a criterion which can be fulfilled with the provision of fixed solutions; it is rather a continuous process of *fitting between action and place*. Lynch points out this relation between the flexibility of public space and of its users:

> "Given spaces of sufficient quantity, which are adaptable, substantially made, and matched to such basic human requirements as warmth, light, dryness, access, and body scale, then in a reasonable time a good fit will appear. Action and place will have adjusted to each other. People can accommodate to almost anything in the normal range of physical environments" (Lynch, 1981, p. 157).

In other words, public spaces have to provide a sufficient variety of conditions which support the comfort of its users; at the same time the design of public spaces has to be flexible enough to accommodate potential changes in use.

2.3.5. Unexpectedness, challenge, and exploration

In interior space the demarcation of public spaces by a boundary allows control over access and activities. Experiences in outdoor public space, however, are less controlled and therefore not predictable.

Seamon and Nordin point out the dual characteristic of regularity and unexpectedness in public space by describing a public market in Sweden:

> "As a weekly event, Varberg market 'unfolds', and this unfolding happens largely through a regularity of place founded in habit. Individual behaviours repeat a similar pattern, time after time, to establish a consistent time-space dynamism. The resulting continuity and expectedness offers a groundstone of stability and taken-for-grantedness out of which a certain amount of novelty, variety, and surprise can arise. Regularity of place, in other words, fosters the possibility of unexpectedness" (Seamon, Nordin, 1980, p. 39).

Public space is also an environment for learning and exploring. Different behaviors, forms and signs motivate people to explore and to understand the environment. Francis stresses the role of public space as 'teacher':

> "Public open spaces, such as streets, parks, and sidewalks, are teachers - places where much urban learning occurs. It is here we become competent in reading and understanding our built environment" (Francis, 1988, p. 58)

2.3.6. Orientation

An important criterion for the use of public space is the orientation within it. Frequent use of public spaces facilitates the identification of a settlement structure or parts of it. Moreover, an understanding of the street structure and the location of major centres may even support the identification with a place by reducing the anxiety of disorientation:

> "Yet the fear and confusion that attend poor orientation, and the security and pleasure evoked by its opposite, connect environmental form to deep psychological levels" (Lynch, 1981, p. 134).

Orientation depends on the identification of a specific structure, of an ordering system in public space. The way in which people structure public space can be different. Lynch points out several ways of developing orientation:

> "Orientation may be an inarticulate memory of the act of navigation ('follow me'), or a more or less structure mental map (ranging from one which is a vague topological network to a scaled geometrical representation), or a remembered series of sequential images ('turn left at the beech tree beyond the green house'), or a set of verbal concepts ('wealthy suburbs surround the center-city slums'), or some combination of these" (Lynch, 1981, p. 134).

In the first part of the thesis the phenomenon of internalization was presented. In addition six basic criteria for the social liveliness of public spaces were described. They will form the framework from which specific criteria for the analysis of interior spaces will be developed in the second part of the thesis.

Part II

The interpretation of interior public spaces based on selected criteria of publicness

In this second part of the thesis, interior shopping facilities are examined according to three criteria of public space:

(1) Choice in public space
(2) Continuity of movement space
(3) Global order

These new criteria were developed specifically to characterize the potential publicness of interior spaces. They differ from the basic set defined in chapter two in that they are either partial aspects of a specific criterion or composites of several criteria.

Choice in public space

'Choice' combines aspects of some basic criteria of publicness. Choice for individual ways of using public space enhances 'use diversity', 'participation', 'comfort', and a sense of 'unexpectedness, challenge and exploration'.

Choice directly affects the 'diversity of use' in public space. People can choose their particular way of using public space and contribute to a use diversity with their individual activity. The freedom of selection for specific locations or activities in public space encourages active participation. Therefore, choice is a significant aspect of the criterion of 'participation'. The selection process is strongly related to a sense of 'challenge and exploration'. A sense of challenge and exploration encourages people to develop their individual way of using public space. 'Comfort' in public space is also based on the opportunity to select from different options. People, for example, feel comfortable if they can select their individual seating position at a comfortable distance to other public activities.

Continuity of movement space

'Continuity of movement space' is a significant aspect of the criterion of 'accessibility'. One condition of the criterion of 'accessibility' is that public spaces are interconnected by a continuous movement network (Hillier and Hanson, 1984, p. 19). In a continuous spatial network public activities can be related to each other and reinforce a continuous experience of publicness (Hillier and Hanson, 1984, p. 20).

Global order

'Global order' is an aspect of the criterion of 'orientation'. Orientation in public space can be achieved by providing continuous clues for people within the public circulation system indicating their location. Hillier and Hanson (1987) show that traditional settlements develop a global order of public spaces which facilitates the orientation at every place within the settlement. Certain spatial clues, like long sightlines or strong three-dimensional forms assist in understanding the organization of public space.

All three criteria embrace qualities of publicness typically occurring in outdoor public space. However, the scale and physical limitation of interior spaces often severely restricts the extent to which these criteria can be realized inside buildings.

1. 'Choice' in interior spaces is limited because each room is typically designated for a specific function. By contrast, in exterior space the activities are connected or overlapped.
2. 'Continuity of movement' in interior spaces is typically limited by subdivision.
3. 'Global order' in interior spaces is limited by the lack of continuity. The global order of interior spaces is achieved typically by moving from one room to another and by developing a mental map of the space rather than having a global overview of the whole system.

In the following three chapters each criterion is presented by describing first its manifestation in outdoor public space, and secondly, its interior interpretations.

Chapter 3

Choice in public space

People using public space have different needs and interests. There is a chance that people begin to identify with public space when they can, for example, select their individual place, (Whyte, 1980, p. 24 - 39) or if they can select their individual distance to other activities or other people (Gehl, 1987, pp. 64 - 74). If people can choose among activities in public space, active 'participation' and involvement is very likely (Francis, 1988, p. 58). Choice in public space supports the process of identification with it; public space becomes rather 'ours' than 'theirs'.

In this section the three basic activities in outdoor public space, 'walking', 'standing', and 'sitting' are described. Subsequently interior public spaces are analyzed in order to point out the potential of interior spaces to accommodate a wide range of combinations of walking, standing, and sitting. The guiding rule for choice as criterion of publicness can be stated as follows:

Public space has to offer a variety of different spaces and elements for the activities of walking, standing and sitting. The more choice people have to select their appropriate way of using public space the more likely they will identify with it and contribute to the diversity of use (Whyte, 1980; Gehl, 1987).

3.1. Choice in outdoor public space

3.1.1. Walking

Pedestrian movement is the most flexible type of movement; people walking through the street can quickly slow down, stop, or turn without affecting others too much. People can easily adjust to other surfaces or small obstacles, such as stairs.

In the following some characteristics of walking are described which have to be accommodated in order to provide choice in public space.

Types of walking

Streets have to provide different types of walking:

(1) Walking *through* the street
(2) Walking *in* the street

People who walk with a clear purpose in mind and try to reach an aim are referred to as 'walking *through* the street', whereas people who participate in street life, while they move along the street are referred to as 'walking *in* the street'.

People walking through a street are more absorbed by an aim in mind or a conversation and tend to perceive the surrounding influences selectively (Rapoport, 1987).

People walking along a street with either no specific or a nearby aim in mind are more open to surrounding influences, change their speed and direction frequently, and react spontaneously to what they see.

Speed, dimension and density

The different interests of people, the different stimulating impressions along the street, and the width of the street have influence on the walking speed and the density of people. The

balance between density, speed and the dimensions of the public movement space has to be defined in order to support adequate walking conditions for all types of walking.

The speed of people passing *through* the street is higher than the speed of people strolling. A wide street facilitates a clear overview of the activities and spaces. It also may reduce collisions especially with people who cross the space diagonally to see the shops on the opposite street side.

For people strolling, however, the street

> ..."must be relatively narrow. The passerby must be able to cast an eye over all the goods on display in the shops opposite without perpetually having to cross from one side of the street to the other. At least, this is what the shopper and certainly the tradesman would like to see" (Krier, 1979, p. 21).

The speed of people strolling in the street is slower because they look for attractions and are always ready to stop or to change their direction. People can meet and greet each other because they relate directly to their surroundings. The cross view to shops at both sides motivates to diagonal movement of people who want to take a closer look into shops.

Alexander defines the minimal movement width as follows:

> "since the likelihood of three people passing three people is not high, we consider as a maximum two people passing two people, or three people passing one person. Each person takes about two feet; there needs to be about one foot between two groups which pass, so that they do not feel crowded; and people usually walk at least one foot away from the wall. The street width, therefore should be *at least 11 feet*" (Alexander, 1977, p. 495 - 496).

The more crowded with people the street is, the more stopping becomes difficult; there are always people behind who would like to proceed.

Gehl points out the loss of choice in an overcrowded street:

> "If the intensity is increased further, a clear tendency toward dividing the pedestrian traffic into two parallel opposite streams is observed. When the

> pedestrians are consequently required to keep to the right in the street to get through it, freedom of movement is more or less lost. People no longer meet but walk behind one another in ranks. The overcrowding is too great" (Gehl, 1987, p.136).

Different movement paths

Public streets can be divided into different walking zones which expose people to a variety of social and spatial impressions. The types of movement paths can be distinguished according to the speed and the involvement of people with the street environment (Eichner and Tobey, 1987).

The center of a street is mainly used for faster movement; people have distance from the building facades and an overview over the street. At the edge zone people have to slow down in order to perceive the different visual impressions along the facades. The edge zone makes it possible to perceive two types of impressions at the same time; both the wide street and the vertical edge of the street:

> "Movement at the edge of a space makes it possible to experience simultaneously both the large space as well as the small details of the street facade or the spatial boundary along which one walks" (Gehl, 1987, p. 144).

The differentiation in width or height of places within the movement space enhances the impression of spatial change (Gehl, 1987, p. 143). Small alleys a few feet wide allow haptic impressions of the surfaces. Pedestrians, especially children, like to explore alternative paths, as for example spaces between columns or street furniture.

Levels above the ground level allow people to withdraw into more specialized areas. An edge zone lifted from the central movement zone with a few steps stresses the difference between two types of movement.

The difference between escalators and stairs connecting two levels is significant for an experientially rich environment. Escalators make only one type of movement possible. Stairs

demand body energy, make stops possible and support the overview of the surrounding in everybody's individual pace.

> "As Lynch suggests much of the risk and challenge has been removed from our public environments. He points out the irony that, in expending great amounts of money to make inner-city transportation easy - elevators, escalators, moving sidewalks and so on - office workers must spend their lunch hours jogging to get exercise (Francis, 1988, p. 58).

3.1.2. Standing

Places for walking and sitting are clearly defined by the provision of elements or spaces exclusively for these activities, whereas the activity 'standing' can take place everywhere. However, there are certain preferred places which encourage 'standing'.

The main stream

Standing in the main stream of pedestrian movement is mainly related to incidental encounters with friends or acquaintances. The open situation in public space gives people the chance to have open, spontaneous talks which can be intensified by pulling out of the main stream.

Whyte having observed people standing in the main pedestrian flow points out:

> "People didn't move out of the main pedestrian flow. They stayed in it or moved into it, and the great bulk of the conversations were smack in the center of the flow - the 100 percent location, to use the real-estate term. ... What is less explainable is people's inclination to remain in the main flow, blocking traffic, being jostled by it. This does not seem to be a matter of inertia but of choice - instinctive, perhaps, but by no means illogical. In the center of the crowd you have the maximum choice - to break off, to continue..." (Whyte, 1980, p. 21).

The conditions for 'standing' change as the activity is extended to 'staying'. Staying in public space needs other types of standing places, which offer more protection.

Edges

Edges demarcate the transition point from one spatial element to another. The edge has two characteristics: first, it gives people the chance to perceive two different types of spaces at one time; and secondly it may protect people because the threshold defines a location. These two characteristics make edges attractive places for standing.

> "At the edge of the forest or near the facade, one is less exposed than if one is out of the middle of a space. One is not in the way of anyone or anything. One can see, but not be seen too much, and the personal territory is reduced to a semicircle in front of the individual. When one's back is protected, others can approach only frontally, making it easy to keep watch and to react, for example, by means of a forbidding facial expression in the event of undesired invasion of personal territory" (Gehl, 1987, p. 151).

The detailing of the facade promotes different types of standing. Edges with show windows promote window shopping and a turning away from the street activities. Plain facades encourage people more to lean against them and to watch street life. Deep facades encourage lingering, talking in groups, playing music, or performing a street theatre.
Protected places where people stand can also be provided by street furniture. Trees, columns, or lamps are points in public space which may encourage people to gather nearby.

3.1.3. Sitting

As Whyte points out in the observation of small urban spaces (Whyte, 1980, pp. 24 - 39), it is not the amount of sun access, nor the shape or dimension of public spaces, which encourages the use of them; it is the provision of "sittable space" (Whyte, 1980, p. 27). Choice for sitting can be provided by the selection of the *location of sitting space* and the *types of seating*.

Location of sitting space

Analogous to the activity of 'standing' people need defined spaces or defining elements which emphasize and protect their selected place by architectural means.

> "Places for sitting along facades and spatial boundaries are preferred to sitting areas in the middle of a space, and as standing, people tend to seek support from the details, of the physical environment. Sitting places in niches, at the ends of benches, or at other well-defined spots and sitting places where ones back is protected are preferred to less precisely defined places" (Gehl, 1987, p. 159).

Choice for sitting spaces is achieved by providing sitting spaces in a variety of orientations and distances from other public activities. People come into public space to watch or meet other people. Sitting spaces from which people can observe the surrounding have to be provided with different degrees of protection. Some people may like to be seen as much by passers-by as they themselves would look at them. Others need a protective distance from which to watch others.

Types of seating

According to Whyte (1980, p. 28), seating has to fulfill two functions to be comfortable. It should provide adequate social distance to others, and it should be physically comfortable.

> "Ideally, sitting should be physically comfortable - benches with backrests, well-contoured chairs. It's more important, however, that it be *socially* comfortable. This means choice: sitting up front, in back, to the side, in the sun, in the shade, in groups, off alone" (Whyte, 1980, p. 28).

Choice for social contact

In his book "the hidden dimension" (1982) Hall points out the difference between 'sociofugal' and 'sociopetal' arrangements of seating places (Hall, 1982, pp. 108 - 111). Sociofugal arrangements of seats keep people at a distance and orient their views into different directions. Sociopetal seats turn people towards each other. Between these two extremes a variety of solutions can be found which offer the opportunity for both socializing and individual experience.

> "... designers should try to place benches that allow for more choice of action than the ... straightforward 'back to back' or 'face to face' arrangements. For example, curved benches or benches placed at an angle to one another often will permit a valuable choice of action. When sitting at an angle to one another it is a bit easier to start a conversation if there is mutual interest in doing so, and if conversation is not wanted, it is also easier to free oneself from an undesired situation" (Gehl, 1987, p. 172).

Whyte stresses that wide benches offer more choice for people:

> "The benefit of the extra space is social comfort - more room for groups and individuals to sort themselves out, more choices and more perception of choices" (Whyte, 1980, p. 32).

Choice for physically different seating

Gehl (1987, pp. 161 - 163) divides seating elements into two categories. 'Primary seating' is provided by benches and chairs, which serve exclusively the activity of sitting; 'secondary seating' describes all elements in public space which are not originally designated to seating but can be used for seating, like stairs, ledges, or building bases.

Mobile benches and chairs give people the opportunity to adapt them to their specific need:

> "Chairs enlarge choice: to move into the sun, out of it, to make room for groups, move away from them. The possibility of choice is as important as the exercise of it. If you know you can move if you want to, you feel more comfortable staying put" (Whyte, 1980, p. 34).

Secondary seating spaces have the advantage of being informal; if they are empty they do not "give the depressing impression that the place has been rejected and abandoned" (Gehl, 1987, p. 163). Typically, secondary seating places invite people to explore them, to improvise and to adjust. People modify and interpret public space, for example, by sitting on an entrance stair. They create a new situation in addition to the usual function.

In summary, the choice provided for the activities of walking, standing, and sitting, is a basis for a public quality in public spaces. The provision of a wide range of choice sets the stage for socializing activities which develop out of walking, standing and sitting. Walking, for example, results in meeting, standing in talking, sitting in playing. If people have choice in public spaces to perform different aspects of the basic activities, the chances are enhanced that they may discover nuances of activities and contribute in this way to a lively atmosphere.

3.2. Choice in interior public spaces

In this section some characteristics of the activities 'walking', 'standing' and 'sitting' and the chances to perform them in different ways are examined in field studies. The analysis indicates the potential choice people can have in interior public spaces.

3.2.1. Walking

In the following, the potential to provide different movement paths in interior public spaces is analyzed. A differentiation between various paths in public space can be achieved by different impressions of density and speed. It also can be achieved by the exposure of people to different spatial zones, as for example the protected edge zone along the facades or unprotected zones in the middle of a mall.

Differentiation of density and speed

In the majority of the observed shopping spaces the activity of walking is related almost exclusively to shopping. Accordingly, the movement speed is slow. Faster aim-directed movement occurs only in places where shopping is connected to other activities as in the *Station*, the terminal for the *Sky Train* (see appendix, p. 119), or in the *Sinclair Centre* (see

appendix, p. 121), where governmental services are located. The concentration on one predominant activity, however, promotes only one movement speed.

The variation of density and speed in public interior spaces allows people to choose a comfortable walking condition. The impressions of density and speed are inter-related; a high speed needs a low density, and high density reduces the speed of movement (Gehl, 1987, pp. 135 - 136).

In interior spaces, an impression of density of people is not only caused by a small width of the circulation space, but also by a low ceiling height and the lack of natural light. The *Pacific Centre Mall* (see appendix, p. 124), for example, has an overall width of 9.20 meters and is subdivided into a central amenity zone and two walking paths along the shops with 3.30 meters width. The circulation space is illuminated with square fields of artificial light above central seating islands. The mall is too narrow especially in peak hours, such as lunch time. People have to wait and let other people pass by especially where stalls in the central amenity zone narrow the paths.

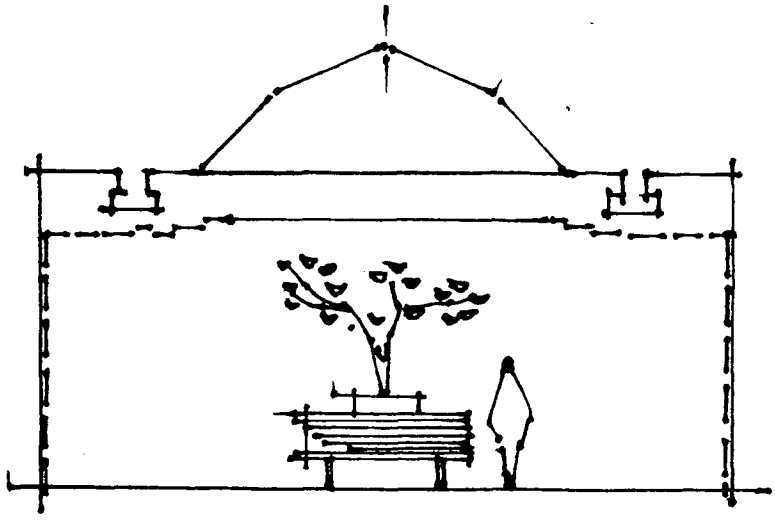

Figure 13.
Pacific Centre and Willowbrook Mall: section through the malls, scale 1:100

Willowbrook Mall shows exactly the same arrangement and width (figure 13); however, it differs in the ceiling height (4.15 meters compared to 3.35 meters in *Pacific Centre Mall*) and in the type of illumination (natural light through skylights compared to artificial light).

The density of people at peak hours is comparable to the density in *Pacific Centre;* the atmosphere, though, is more relaxed. People find a space to surround each other and seem to do so willingly. Opportunities for individuals to develop their own interests and to interact with the environment are enhanced. Accordingly, malls with a high ceiling and natural light sources reduce the impression of density and enhance opportunities for individual activities.

A reduction of the movement speed can reduce the feeling of density even in small crowded spaces. In the *Netloft* on *Granville Island* (see appendix, p. 127), the average width of the walkways is approximately 2.60 meters. The slow movement is supported by the impression of being in a hall with no dominant movement direction.

The same phenomenon can be observed in the *Granville Island Market.* The small width between the stalls and the resulting density is compensated for by a high ceiling and a clear impression of a large hall where movement paths are not defined with clear vertical boundaries.

Collectively, the specialization of interior spaces supports only one movement speed. Moreover the minimized size of many interior malls significantly reduce choice for different walking experiences by overcrowded spaces. However, interior spaces indicate significant opportunities to provide choice.

Different movement paths

The provision of distinct movement paths enhances the choice people have in public space. The definition of movement spaces along the edge of the shop facades and their protection and separation from other movement spaces creates a range of openness and opportunities for choice.

A successful 'window shopping zone' which is separated from an open public central space can be observed in the *Oakridge Centre* (see appendix, p. 128). In one of the two main corridors the zone at the edge is separated from the inner movement space by a row of columns and a lower ceiling height (figure 14). This separation creates the impression of different types of movement spaces; people can choose between a more protected space serving the activity of shopping and an open space independent from the activity of shopping. The open zone in the centre is used for activities not directly related to shopping, such as seating or playing.

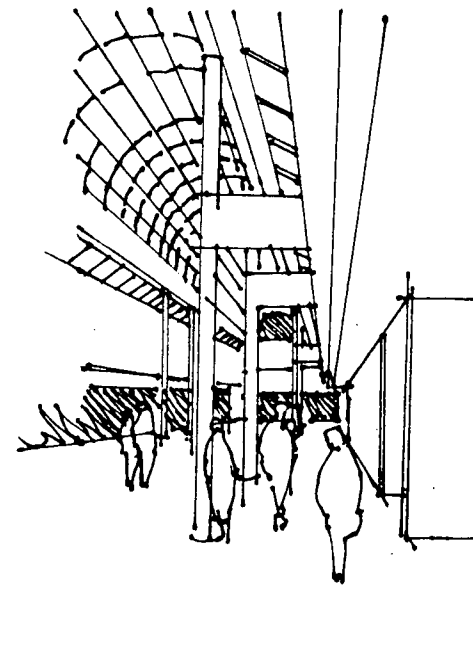

Figure 14.
Oakridge Centre: two types of paths

The row of columns creates a threshold which promotes standing activities like waiting or orienting.

Another example is the separation of different zones in *Sinclair Centre* (figure 15). The core of the facility is an open central plaza with a glass vault. The square is surrounded by a wide window shopping zone. It is separated from the plaza by a low ceiling and a wide threshold

zone defined by groups of columns around the square. All three spaces, the square, the threshold zone and the shopping zone serve distinct functions. The square is mainly a transition space; only few local activities at the edge can be observed. In the threshold zone people can sit and observe both the square and the shopping zone. In this shopping zone slow movement takes place; restaurants offer various seating places.

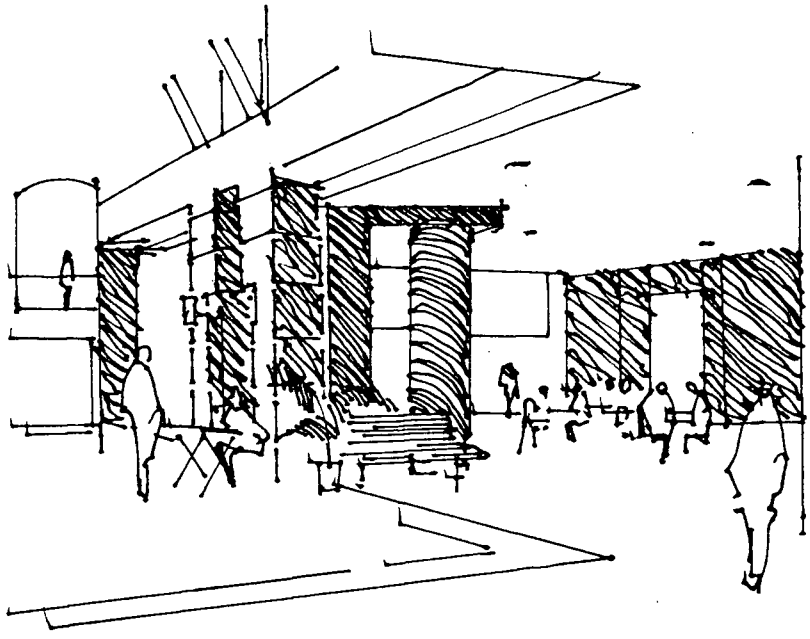

Figure 15.
Sinclair Centre: the edge zone

Here again, the different degree of protection of two spaces and its threshold create both secluded and open, lively spaces.

In most underground malls, as the *Pacific Centre*, *Bentall Mall* (see appendix, p. 123), or *Royal Mall*, the shopping zone is distinguished from the movement space only by few details (figure 16). The spatial organization does not promote alternative activities and enhance choice. The row of shopping facades is mostly straight, the window shopping zone is demarcated with a cornice at the ceiling and darker floor tiles along the shop facade. Most shops are wide open and the actual window shopping zone is introverted into the shops. People use this zone for orientation and for adjusting to the movement flow. The emphasis

lies on the activity of shopping and not equally on both shopping and other public activities independent of direct involvement with shopping.

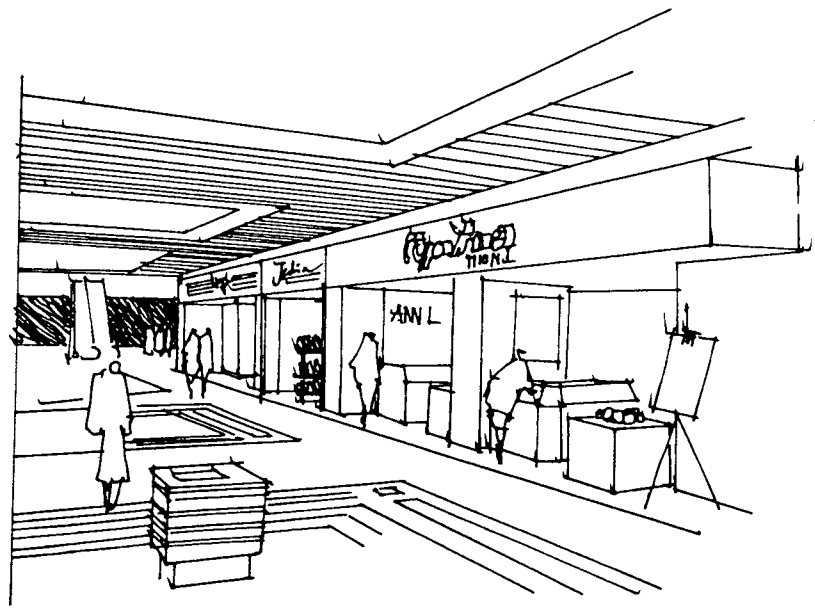

Figure 16.
Pacific Centre: the edge zone

Alternative routes within a movement space enhance the choice people have of experiencing the environment. In *Oakridge Centre,* for example, people tend to walk through an area defined by a group of trees (figure 17).

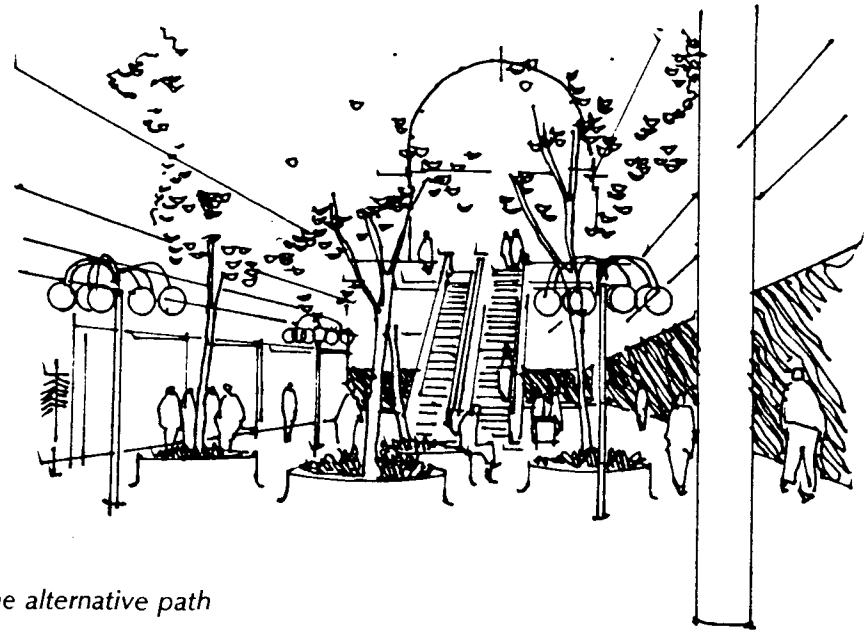

Figure 17.
Oakridge Centre: the alternative path

Although they have to follow a curved route they seem to prefer the contrast to the surrounding unprotected space.

On both levels in *Sinclair Centre*, two different rows of columns create small interstices. A considerable number of people prefer to walk between the columns, although they have to proceed carefully and slowly (figure 18). Small children like to explore the very narrow places between the columns and under the slope of the stair. What may seem to be waste space caused by the conversion of four historical buildings into one covered public centre, provides an important enrichment for the choice in public space.

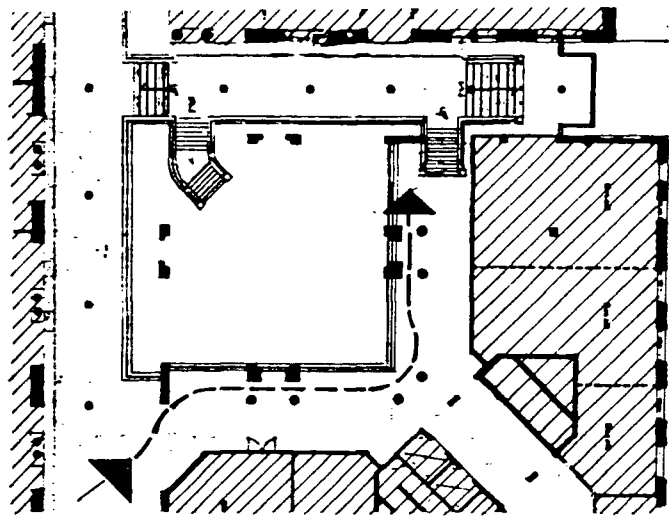

Figure 18.
Sinclair Centre: the alternative path
Source: Administration Office, Sinclair Centre (redrawn by the author)

The organization of interior spaces on different levels enhances choice by creating different degrees of use and different distances to main activities. However, the organization of public activities on the ground level is, according to Gehl, a more successful solution than the distribution on several levels.

> "The difficulties in getting multistorey city centers and shopping malls to function also emphasizes pedestrian's reluctance to depart from simple horizontal traffic if they are not offered uncomplicated escalator transportation" (Gehl, 1987, p.145).

The observation of several multistorey shopping facilities indicates that 'choice' can be enhanced by introducing a second or third level. Levels above ground are more specialized, less accessible, and therefore less publicly used. However, they offer more choice to define ones distance to foci of public liveliness. The railings on the upper mall of *Sinclair Centre* provide the opportunity to walk along a less public area and to watch the activities on the lower level. The ground floor gains the character of a public outdoor street which is controlled by adjacent buildings.

Escalators and stairs connecting different floor levels offer significant experiences for their users and for people watching them. In *Sinclair Centre* the central square is 'fed' with people coming down the diagonal stairs (figure 19).

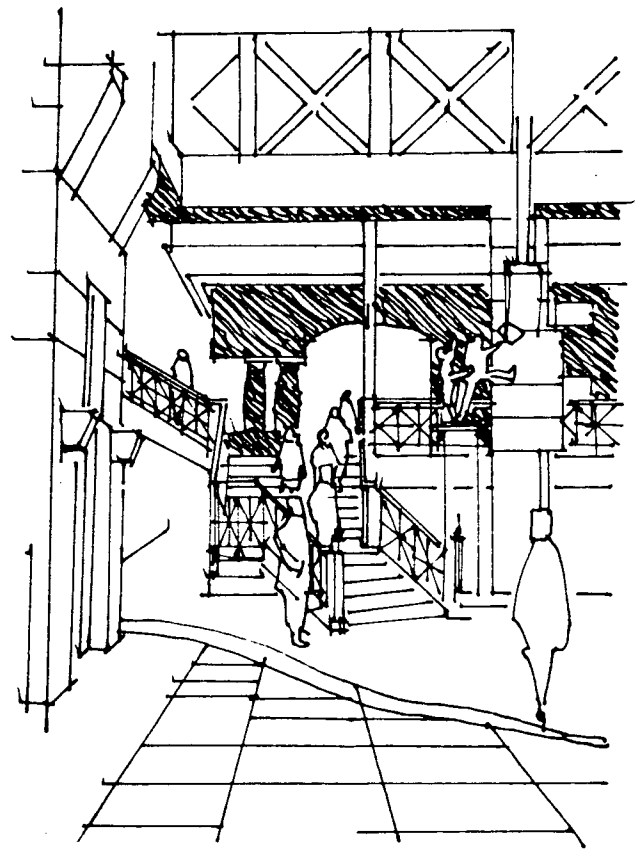

Figure 19.
Sinclair Centre: the central plaza

People can experience the centre of the place and become at the same time a target for people watching around the edges.

A similar situation appears in the *Landing* (see appendix, p. 120) where the diagonal movement on the escalator reveals the concept of the facility. People sitting around the escalators can observe continually changing scenes.

In summary, interior spaces offer considerable potential to enhance walking experiences. Paths with different degrees of protection create choice for walking. The separation of zones which involve shopping activities from zones encouraging other public activities supports choice. Elements, like columns or stairs which are typical features of interior spaces make the differentiation of walking paths possible. The dense overlay of walking spaces on different levels enhances experience and choice.

However, the economical organization of interior spaces creates in many shopping centres a high density of people, which reduces choice. Moreover, the specialization of shopping centres on merchandising promotes only one movement speed.

3.2.2. Standing

Compared to walking and sitting, the activity of standing is only rarely observed in interior public spaces. The activity of shopping itself promotes standing in front of show windows and stalls. Optional standing and watching others, however, is rare primarily because shoppers carry bags and prefer to sit in order to rest. Moreover, the primary intent of shopping malls is the economical turnover; accordingly, there are only few places which encourage 'standing' without involving people at the same time in merchandising.

Standing is often related to the casual meeting of acquaintances in public space. Since shopping centres in urban contexts do not draw people from a small community in the neighborhood, the probability of meeting friends is relatively low.

The most standing activities were observed in *Sinclair Centre*, probably because it is a natural meeting area of the governmental employees from different offices. The limitation of interior shopping spaces to few functions reduces the range of possible 'standing' activities.
In the following two typical locations for 'standing' and their interpretation in interior spaces are analyzed.

Standing at the edge

Standing at the edge of interior facades and looking at show windows is the most common form of 'standing' in malls. In shopping centres without a protected window shopping zone, shops opening their whole facades tend to draw people into shops. People make a few steps into the shops to overlook the merchandise. Standing in public space seems to be avoided in order to motivate spontaneous purchasing.
In the *Oakridge Centre* some shops withdraw parts of their facade from the common facade edge rather than opening the shop facade. People stand in these pockets, hesitate before they enter, or adjust to the movement flow when they leave. Shopkeepers also spend long periods of time there talking to customers or observing activities in the mall (figure 20).

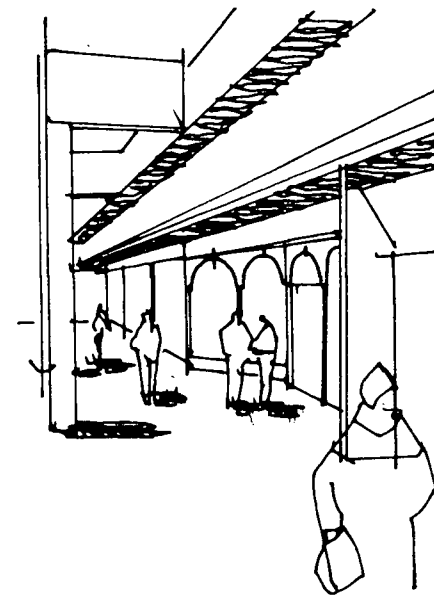

Figure 20.
Oakridge Centre: activity pockets at the edge

Accordingly, a closed shop facade with pockets promotes standing in public space whereas wide open shops promote standing in private space. Open shop facades follow the idea of optimized merchandising.

Gathering around counters is another location for 'standing' within interior spaces. Some counters protect the standing place in front of them; one example are the balconies containing offices above the counters in the food fair of *Granville Island Market* (figure 21).

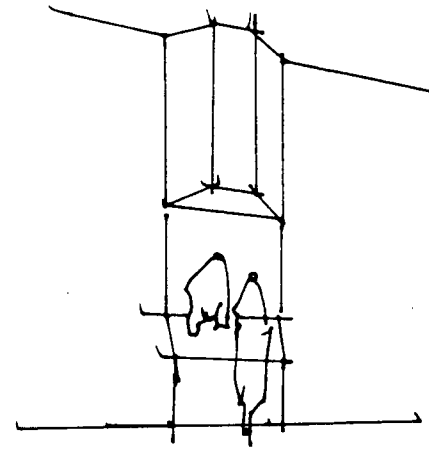

Figure 21.
Granville Island Market: the food fair

Standing at elements

Places defined by single elements, like columns or lanterns, are attractive for 'standing' (Gehl, 1987, p. 153 - 155).

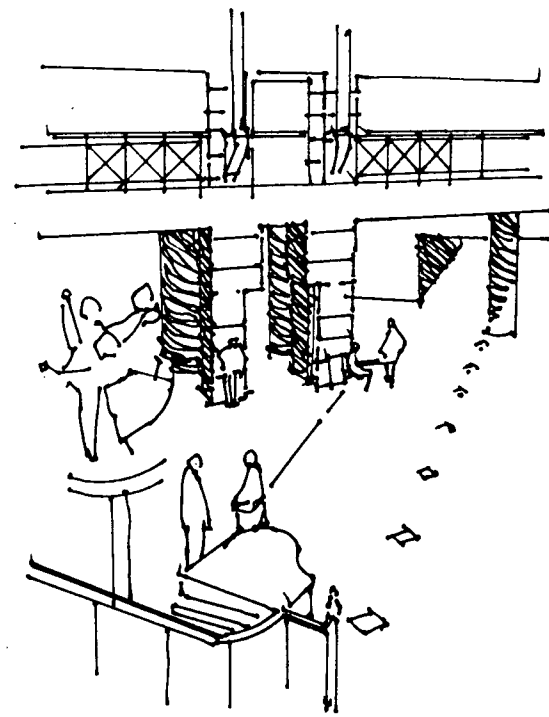

Figure 22.
Sinclair Centre: standing activities

They invite people even more to stand near them if they can watch other activities from their standpoint.

In *Sinclair Centre*, for example, the columns around the square offer both a protective place and a good view to the open space. Another standing support in *Sinclair Centre* is the piano which is located at the edge of the square (figure 22).

In summary, the spatial conditions of interior spaces offer a wide potential to encourage standing. However, different standing activities are not performed simply because shopping centres discourage people to stand:

First, shopping centres serve a large range of customers; that reduces the chance to meet friends incidentally. Secondly, the process of spontaneous buying is supported whereas undecided standing is discouraged by not providing spaces for this activity. The window shopping zone is often shifted into the shop entrance zone closer to the merchandise.

3.2.3. Sitting

The opportunity to choose socially and physically comfortable seating is a criterion for successful spaces (Whyte, 1980, pp. 24 - 39). In most shopping centres few choices for seating are offered. This indicates the reluctance of shopping centres to encourage other public activities except shopping. Most interior shopping places offer only one type of seating in public space in very unprotected areas. The arrangement encourages people to rest only for a short time. Long term activities related to seating are discouraged.

In *Harbour Centre* (see appendix, p. 122) a few identical seating islands are the only facilities to sit down (figure 23). They are located at crossings of paths where people are exposed to all passers-by. There is no possibility to hide oneself from other people; therefore most people leave the seating islands after a short period of time.

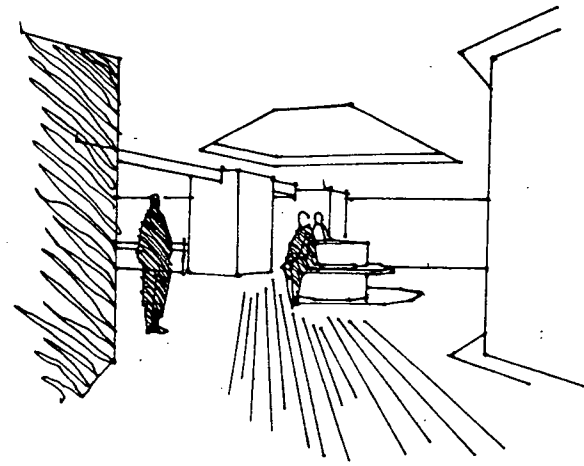

Figure 23.
Harbour Centre: sitting activities

A similar situation can be observed in the *Pacific Centre* where passers-by intrude into the unprotected personal zone of resting people. The benches are planned at right angle to the movement which exposes the resting people completely to passers-by. Benches parallel to the movement flow could enhance the protection. In the passage from the *Pacific Centre Mall* to the *Vancouver Mall* some benches are located at small recesses parallel to the pedestrian flow (figure 24). These places are typically occupied for long periods of time.

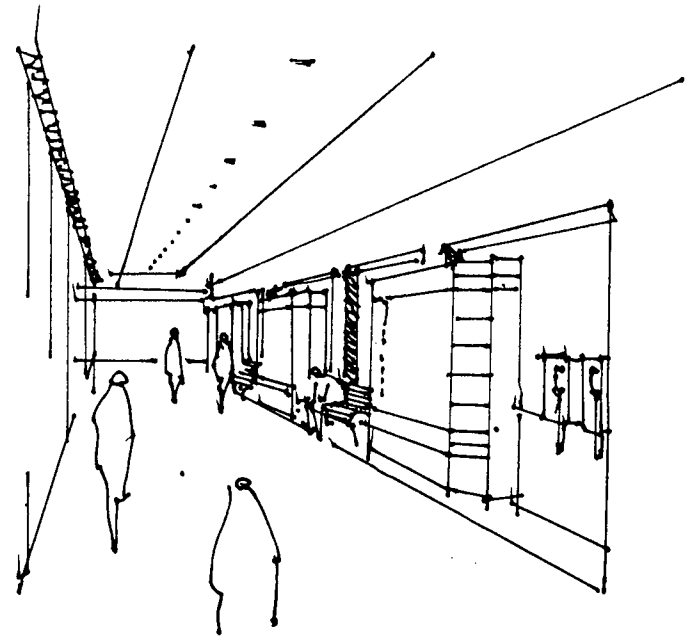

Figure 24.
Pacific Centre: long term sitting

By contrast, the *Oakridge Centre* offers a variety of seating spaces with different degrees of protection. In large sunken seating islands, protected by small walls and railings, people can withdraw from the surrounding liveliness, can read a book, knit or perform other long term activities (figure 25). The interior arrangement of every island differs: one is protected by trees and by an access which is not directly in the main movement flow; another one is cut into halves by the movement flow; a third is arranged as playground for children.

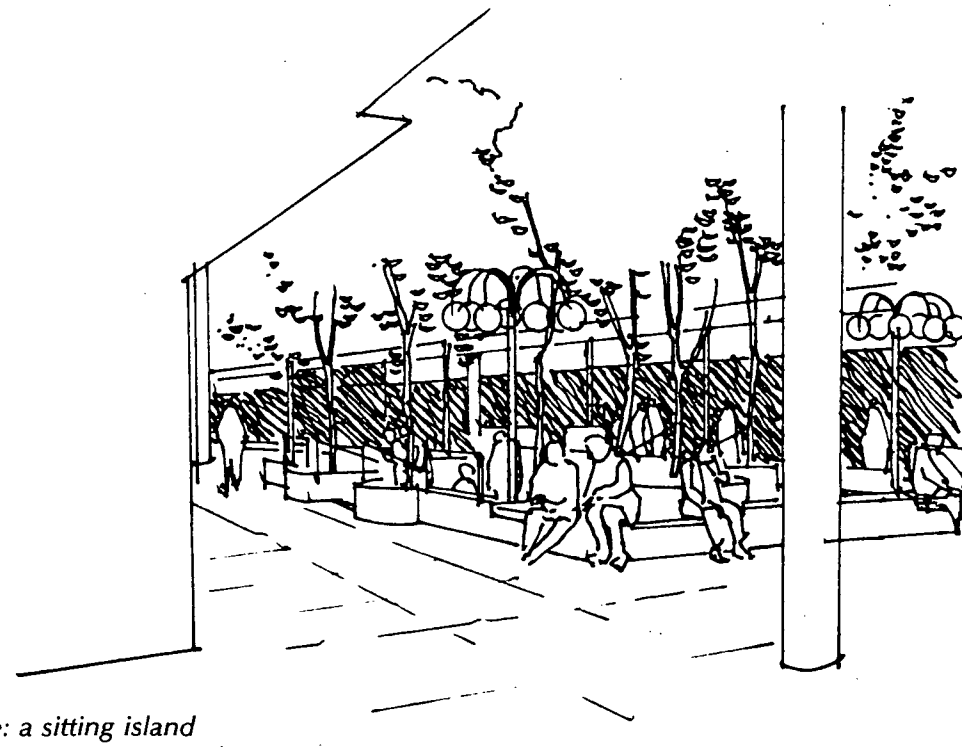

Figure 25
Oakridge Centre: a sitting island

Gehl's distinction between primary seating and secondary seating cannot clearly be applied to the seating islands. They combine the idea of primary and secondary seating. They are primary seating insofar as they mainly serve the function of being benches; but they are also secondary seating insofar as they determine the structure of the movement space. They are fixed elements and reduce as such the choice to adapt them to individual needs.

The often observed combination of the idea of primary seating and secondary seating indicates the tendency of interior spaces to *define* potential activities by providing spaces and elements for them. These elements are an essential part of an overall design rather than

subordinated features. The small range of activities which is carried out in shopping centres is explicitly manifest. In contrast, outdoor space indicates a low degree of specialization because it serves a wide variety of different activities.

The appearance of seating spaces in interior public spaces is an indicator of the one-sided economic interest in shopping malls. Shopping does not create a space with a low degree of specialization which encourages a variety of activities. It *provides* space. Shopping centres support mainly short term seating activities; people are encouraged to buy and not to come and only to sit .

3.3. Summary

The field studies have shown that the potential for a wide range of activities within shopping centres is often limited by economic influences:

Profitable space

The most significant constraint which inhibits the development of a wide range of activities is the optimization of interior spaces for economic return. In order to create an economic building concept, the organization of interior spaces depends on anticipated activities. Left over spaces are avoided. The lack of these spaces which could encourage passive activities, challenge and exploration in public space reduces the public quality of interior space.

Accordingly, interior space can be described as *space of provision.* The organization of interior space is done by assuming preconceived conditions or activities. By contrast, the low specialization of outdoor space allows adaptation of form and function to continually changing uses. Outdoor space can be shaped by continuous use. Accordingly, exterior space is shaped by active participation of many people and might be described as *space of participation.*

One-sided use

Shopping centres provide an environment concentrated on merchandising. They rarely encourage the mix of different uses around one common public space. This limitation of functions reduces the potential activities. The primary interest of shopping facilities is the interface between the customer and the merchandise. The interaction of people or individual experiences in public space is only supported as far as it does not distract from merchandising.

However, there is a wide range of architectural measures which can encourage public activities and enhance the public quality of interior spaces. Three main qualities evident in the field studies which support public liveliness can be summarized as follows:

Different degrees of openness

People can perceive the publicness of a space if they experience different degrees of exposure to the public environment. In public space people are exposed to a variety of environmental influences - visual, haptic, and acoustic impressions. Different movement paths allow various perceptions of the surrounding spaces. Peripheral activity pockets and niches with different distances to the main activity areas encourage individual activities. The edges between major activity zones, defined by columns or a low ceiling also give people the opportunity to withdraw from lively public areas into more protected zones.

Overlap of activities

The concentration of many activities in a limited space has the potential to generate many new activities. These result from the close proximity between neighboring activities. The arrangement of sitting spaces around stairs and elevators, for example, enhances the interface of people walking with those sitting. Consequently the two activities, walking and sitting, when brought together, initiate a third activity - spectating between groups or even

exchanging opinions about shared impressions (Whyte 1980, 94 - 101). Also the overlap of merchandising activities with individual public activities can enhance public liveliness. Standing and sitting spaces in close proximity to shops invite resting and watching other people.

Participatory space

Public spaces serve a variety of different functions. Accordingly, the architectural framework should provide an environment which is not restricted to single specialized activities. Stairs, for example, need not be singular in function. They can serve as seating for performing street theatre. The architectural elements with several potential functions in public space can invite people to participate and explore. The field studies indicate that revitalized historic buildings create shopping environments which expose people to a wide range of experience and challenge. The leftover spaces which indicate the gap between old and new functions encourage the exploratory sense.

Chapter 4

The continuity of movement space

In this section the criterion of the 'continuity of movement space', which supports the public quality of spaces, is examined in field studies. The continuity of movement spaces is an essential part of the criterion of accessibility. The ways interior public spaces are connected to each other or to a coherent outdoor public movement network affects the use by people (Whyte, 1980). The disconnection of interior public spaces from outdoor movement space can define distinct degrees of public qualities not related to an overall idea of publicness. In the following sections the types of connection of interior public spaces to outdoor space and the impact on the public quality of interior spaces is analyzed.

4.1. The continuity of outdoor movement space

A public quality of spaces is developed by the activities of people in public space. A homogeneous public quality can be achieved by providing the opportunity for pedestrians to use public spaces by moving through them. Outdoor public spaces are characterized by a continuous public street network. A continuation of publicness implies a continuation of the movement network.

In order to support a continuous public quality, spaces are inter-connected. The coherent movement network defines a coherent public quality by providing the opportunity for people to move through public space.

Continuous movement can be provided by creating a coherent spatial movement system. If people cannot move freely from one space to another space they cannot create and perceive the sense of a continuous public quality. In the following, three ways to create a continuous outdoor movement system are presented.

4.1.1. Continuity through sightlines

People entering a space tend to feel comfortable when they can identify a connection to other spaces. Ittelson describes the steps in which people organize the information they perceive about their environment as follows:

> "...people seem to organize perceptional responses to the environment around five identifiable and interrelated levels of analysis. These are: affect, orientation, categorization, systematization, and manipulation" (Ittelson, 1973, p. 16).

Immediately, after a first impression and an emotional response to an environment, people orient themselves in space. "The identification of escape routes is perhaps the most primitive form of orientation ..." (Ittelson, 1973, p. 16).

The obvious way of indicating a continuous movement route in public spaces is to connect individual spaces by sightlines. If people can look through a sequence of local activity spaces and detect an exit at the other end they are given the opportunity to map out an escape route.

However, there has to be a continuous system of movement spaces connected by sightlines in order to maintain a continuity of movement. Whyte points out the importance of continuous sightlines in the context of hidden spaces and sunken public plazas:

> "Sightlines are important. If people do not see a space, they will not use it. ... Unless there is a compelling reason, an open space shouldn't be sunk. With two or three notable exceptions, sunken plazas are dead spaces. You find few people in them; if there are stores, there are apt to be dummy window displays to mask the vacancies. Unless the plaza is on the way to the subway, why go down into it? Once there you feel rather as if you were at the bottom of a well. People look at you. You don't look at them" (Whyte, 1980, p. 58).

What Whyte suggests for sunken plazas can also be applied to other dead-end streets. Wherever people go and cannot find a continuation of their path, they feel exposed to and controlled by the surrounding. Dead-end streets segregate the public activities of spaces rather than integrating them.

4.1.2. Continuity through a ring system

Hillier and Hanson show in their analysis of traditional settlements (Hillier and Hanson, 1984) that in the majority of spaces serving mainly pedestrian movement, the circulation system remains coherent through a connection of sightlines in overlapping rings (see figure 11 on page 32).

A ring system generates a continuous integrating structure rather than a segregating one. It permanently reinforces activities because the movement of people leads from one ring to the other or continues within the same ring. The opposite to the ring system is the organization of dead-end streets branching from a main street. Dead-end streets lead to a dissipation of public activities and not to a concentration of them.

Bennett (1962) emphasizes the layout of movement networks especially for commercial purposes in a continuous pattern. Referring to the organization of amusement parks he says:

> "The typical arrangement seems to be a meandering closed ring which returns on itself so that one starts a second circuit before one realizes it. While at first glance the informal layout may appear 'parklike' in character, the looking-around-a-corner process lures one foreward and - at the same time - by shortening and limiting the view, as in many villages, concentrates one's attention upon the attractions most nearly at hand" (Bennett, 1962, p. 93).

4.1.3. Continuous pedestrian involvement

Pedestrians perceive a public quality by using and participating in public spaces. Public space must continuously attract people and involve them in order to promote a public quality:

> "...people gravitate naturally toward the edge of public spaces. They do not linger out in the open. If the edge does not provide them with places where it is natural to linger, the space becomes a place to walk through, not a place to stop" (Alexander, 1977, p. 600).

The continuous provision of shops along movement paths indicates the use of a space by the public. The interruption of the continuity of involvement diminishes the continuity of publicness.

The connection of local activities with commonly used walking routes in public space enhances the potential for the development of a strong public quality. Shops depend on the continuous flow of people because passers-by can be turned into customers.

In the following, movement spaces inside buildings are examined in field studies to point out the potential for interior public spaces to reinforce the public quality.

4.2. The continuity of movement space in interior public spaces

Entering a building, one experiences a change from the continuous outdoor movement system to a separated, discontinuous, and restricted space system. In outdoor space, individual places are infinitely agglomerated. The interior of buildings, however, is determined by a sequence of finite, clearly demarcated rooms. A continuation of spaces with a public quality, however, requires a continuation of the movement route.

Internalized public spaces serving the public activity of shopping, can relate to the outdoor movement structure in three ways (figure 26):

(1) spatial relationship
(2) extension of the exterior
(3) analogous relationship

Interior spaces which are a specialized part of the outdoor movement network interact with the outdoors in a *spatial relationship*. On the other hand, they are only an *extension of the exterior*, if they do not provide a continuous path through them or do not connect significant outdoor spaces. An indoor movement system which is isolated from the outdoor movement

system and creates an independent movement structure analogous to the exterior interacts with the exterior in an *analogous relationship*.

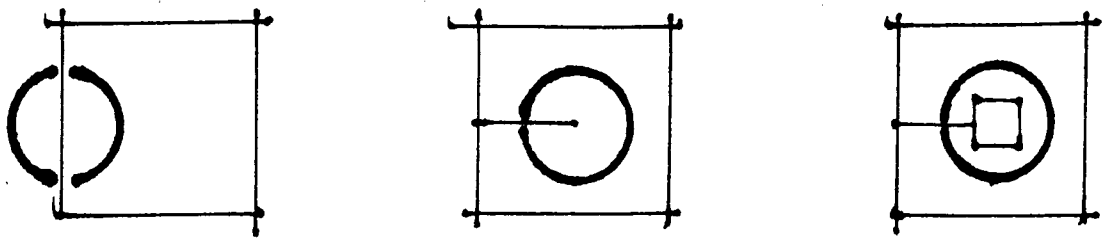

Figure 26.
the spatial relationship *the extension of the exterior* *the analogous relationship*

In the following field studies these three types of relationships are examined in order to point out typical tendencies in the relationship between interior and exterior spaces.

4.2.1. The spatial relationship

The covered street as a specialized and protected part of the outdoor movement space supports the continuity of the exterior movement network. Eichner and Tobey emphasize that interior public spaces must be part of the exterior movement system:

> "When provided, interior shopping malls should not result in the elimination of street retail uses. They should connect places where people want to go; the provision of a meaningful connection through a block will give a mall a public function. Finally, they should appear to be an extension of the public space and wherever possible, doors between street and mall should be avoided: the opportunity for persons to wander in, simple as it may seem, is critical to the establishment of a public character" (Eichner, Tobey, 1987, p. 278).

Shops along a covered street as part of the outdoor movement system make the activity of shopping part of daily life as one passes by. Shopping is an activity as much (or even more) directed by spontaneous interest as by clear purpose.

The following two examples, the *Station* and the *Pacific Centre Mall,* develop a spatial relationship to the outdoor movement network which have a different influence on the interior public quality.

The *Station* in Vancouver, a longitudinal building along the waterfront, shows the characteristics of a spatial relationship to the exterior movement system (figure 27). It is an activity node through its function as the *Sea-Bus Terminal.* Around a central entrance hall and along a corridor it provides a few retail services and restaurants. The movement path connects two outdoor destinations with a direct axial sightline. The pedestrians entering the building can see the exit and the outside again at the other end of the path; therefore the building offers an easy orientation.

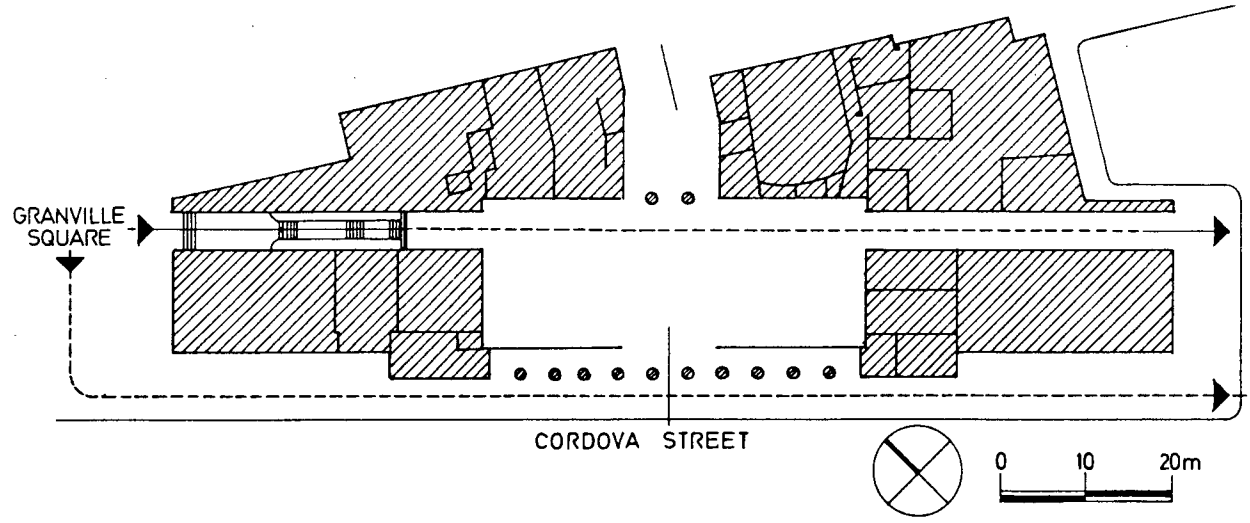

Figure 27.
The Station: ground floor plan
Source: Administration Office, The Station (redrawn by the author)

The *Station* automatically gains a strong public character because it is a movement route between two otherwise disconnected areas, the *Granville Square* and the entrance to *Gastown. Granville Square* offers two routes to *Gastown.* One leads down over stairs through

a parkade entrance to the street level; from there the pedestrian sidewalk passes by the *Station* and leads to *Gastown*. The second one leads directly over interior stairs along shops and restaurants through the longitudinal passage of the *Station* and the exit at the opposite side towards *Gastown*. On the first route one has to change direction several times and to make a detour around the *Station*, whereas the second route provides a clear sightline through the *Station* parallel to the water front.

The organization of the *Pacific Centre Mall* is also based on the idea of a connecting street. However, the public quality is weakened because the interior mall connects two places which play only a secondary role in the urban context.

Beginning with the *Eatons department store*, the complex is extended as the base of the *Toronto Dominion Tower*, the *IBM Tower*, the *Four Seasons Hotel*, and the *Stock Exchange Tower*. Because the mall is on a slope which runs from south to north both sides have street access. The *Pacific Centre* offers a continuous route over two levels ending in one direction at the *Eatons department store* and in the other direction of the *IBM Plaza* (figure 28). Although both ends are of interest to the visitors of the mall, they serve no major function within the outdoor movement system. The plaza serves not as focal point of activities but only as an access space to an interior event.

The *Pacific Centre* provides a street-like interior space. It does not, however, connect publicly important activity nodes which is a characteristic of the exterior street. If this argument is applied not only to the starting points of the mall but also to all entrances, then the critique becomes even more justified:

> "Malls have no streets. They have pedestrian passages between parking lots and store entrances. Those passages have a distinct and limited beginning and end. Streets on the other hand, link the mixed functions of a city" (Brandes-Gratz, 1981, p. 80)

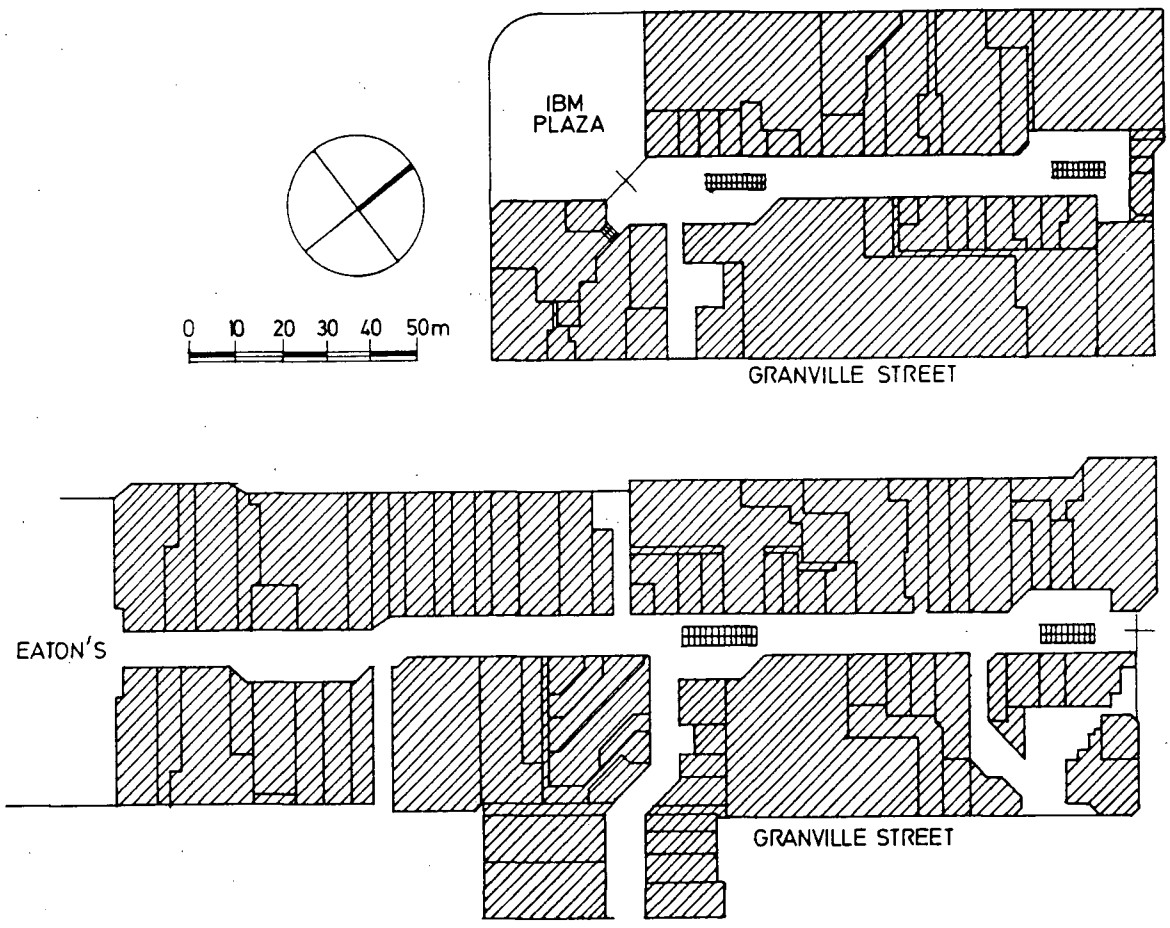

Figure 28.
Pacific Centre: ground floor plans of the upper and lower mall
Source: Administration Office, Pacific Centre (redrawn by the author)

The two examples indicate that interior public space can gain a public quality if it connects significant outdoor spaces. It looses public quality if it creates its own aims which are only weakly or not at all connected to an overall movement system.

4.2.2. The extension of exterior movement space

Interior public spaces adjacent to the street and accessible by a single entrance have the character of dead-end streets. They withdraw people from the street into a space which inhibits *through movement*. The extensions of the exterior movement space are not directly adjacent to the natural movement route; they disperse public life rather than concentrating it.

The following two examples compare extensions of exterior movement space. The first, *Robson Fashion Park* (see appendix, p. 125), isolates itself from the outdoor continuous movement space. The second, the *Landing*, although it is also an extension of public space, strenghtens its public quality by defining significant connections to the outside.

Robson Fashion Park is a covered public space surrounded by shops in an approximately 35 meter long axis parallel to *Robson street*, a dense shopping street (figure 29). *Robson Fashion Park* fulfills many criteria of a public interior movement space with its architectural and functional characteristics. The longitudinal shape supported by a glazed vault construction in particular signifies the direction of the movement space. The entrance into the indoor public space, however, is not located at both ends of the corridor, but at the middle of one side.

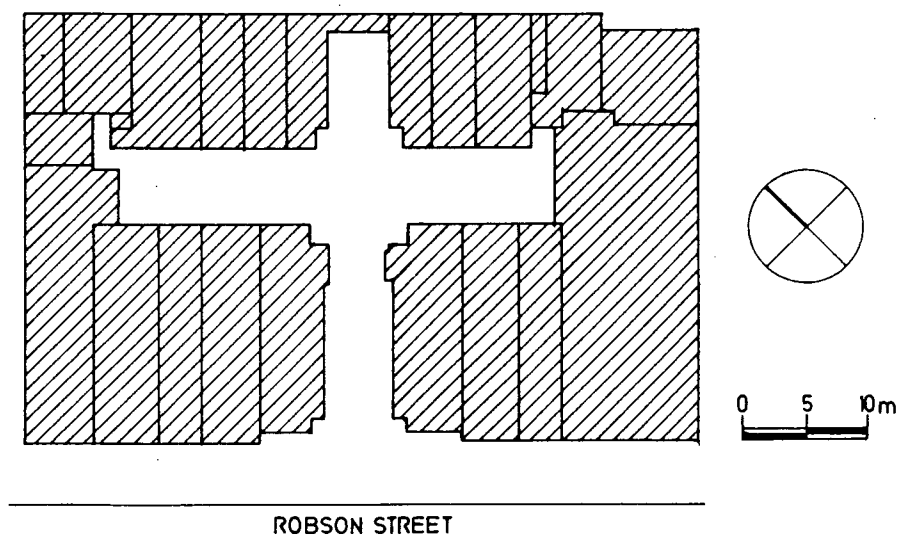

Figure 29
Robson Fashion Park: ground floor plan
Source: Arix Realty Corp; 885 W Georgia, Vancouver (redrawn by the author)

The entrance perpendicular to the outdoor movement pattern inhibits the flow into the building and separates the interior space from the street. This implies that one has to make a decision whether to enter the space or not. Moreover pedestrians must have a purpose for entering. In order to explore the interior, the pedestrians have to go deep into the space at

both sides. The dead-end streets at both ends tend to be more private spaces because the customer feels exposed and observed by adjacent shops.

The lack of an adequate circulation opportunity cannot be compensated for by a design resembling a passage. The integration into the outdoor movement flow with two entrances at both sides could probably increase the pedestrian activities and open up an otherwise internalized structure.

In the *Landing*, a small interior shopping centre, the circulation system is not based on the concept of continuous *through movement* (figure 30). However, although it is a cul de sac, it continues the movement space visually through a window to the outside. The pedestrians can orient themselves easily along the sightline.

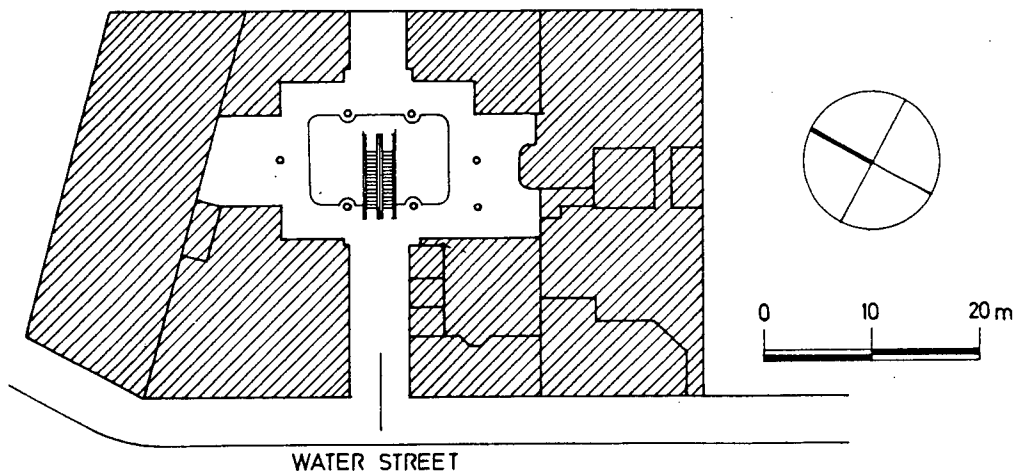

Figure 30.
The Landing: ground floor plan
Source: Administration Office, the Landing (redrawn by the author)

The axis cuts into a two storey centre space. The publicly used movement spaces are concentrated in ring form around the open centre. Since the central square and the movement space along the shops are easily identifiable; the customer does not have to enter deep into the space. Secondary corridors which lead away from the centre space are

connected to outside public space. The organization of movement spaces in the form of rings and the axial view through the centre enhances the continuity of movement space and therefore the public quality.

Robson Fashion Park demonstrates how a misinterpretation of the street concept can lead to a more private system. By contrast, in the *Landing* the idea of continuous public space creates a more public area. Once pedestrians have made the decision to enter the building they find themselves in a system analogous to the outdoor continuous system.

4.2.3. The analogous relationship

Interior public structures separated from the outdoor movement system tend to develop a continuous movement pattern analogous to an outdoor pedestrian system. The only link between interior isolated public spaces and the outdoor movement system is the form and structure which is analogous to outdoor streets. The internalized shopping centre becomes an isolated city within a city; it stresses the activity of shopping as an isolated event rather than as one part of the complex street life.

However, interior public spaces are not only isolated from the surrounding public outdoor spaces, but also from all other interior public spaces in a city. The only connection between isolated public interior spaces is that all of them create similar interior concepts based on a conceptual analogy to outdoor public space.

Hillier and Hanson (1984) describe the conceptual relationship between interior spaces as a "transpatial relation" ((Hillier and Hanson, 1984, p. 20). They point out the two possible relationships between spaces as follows:

> In their elementary forms, in effect, buildings can participate in a larger system in two ways: first, in the obvious way they are spatially related to other buildings; and also, less obviously, by separating off systems of categories from the outside world - using spatial separation in order to define and control that system of social categories - they can define a relation to others by

> conceptual analogy, rather than spatial relation. The inhabitant of a house in a village, say, is related to his neighbors spatially, in that he occupies a location in relation to them, but also he relates to them conceptually, in that his interior system of spatialized categories is similar or different from those of his neighbors. He relates, it might be said, transpatially as well as spatially" (Hillier and Hanson, 1984, p. 20).

Accordingly, interior public spaces develop a two-fold analogy; the analogy of interior public spaces to exterior movement spaces and the analogy among interior spaces themselves.

The following two examples show two different interior movement systems. The system of the *Oakridge Centre* is isolated from the surrounding outdoor space and relates to the outdoor urban structure as an analogy. In *Harbour Centre* the potential analogy is ignored. There is instead a spatial relationship to the exterior.

In the *Oakridge Centre* all shops and department stores are arranged around one circulation ring (figure 31). Smaller access corridors connect the circle to the outside parking lot. People can orient themselves easily along the wide public circulation space. They can extend their steps into department stores and come back again to the main circulation route. The movement structure of the *Oakridge centre* is a repetition of the urban circular system in a small scale.

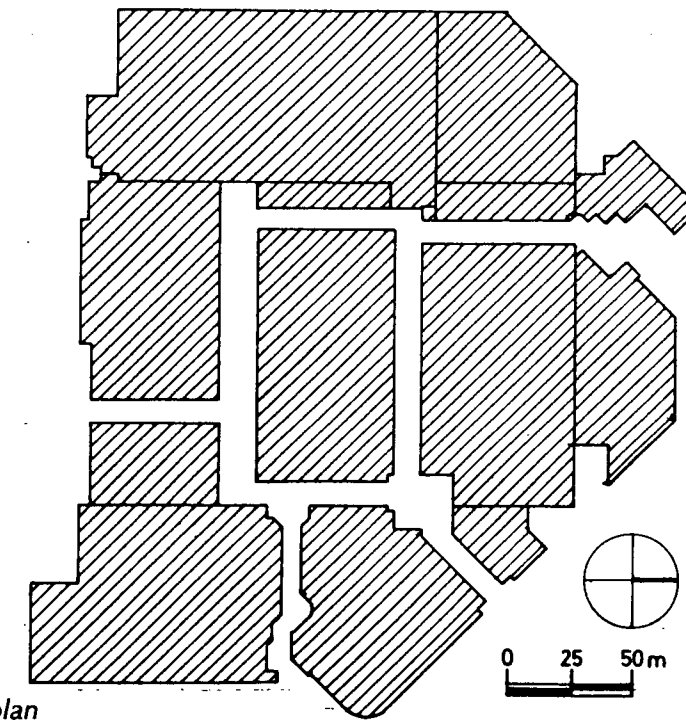

Figure 31.
Oakridge Centre: ground floor plan
Source: Administration Office, Oakridge Centre (redrawn by the author)

The *Oakridge Centre* is a disconnected interior analogy to the outdoor structure, which does not contribute to the outdoor movement system. Compared to a spatial relationship which accepts the dominance of exterior space by relating its inner structure to it, the analogous connection is an isolated relationship (Hillier and Hanson, 1984, p. 145).

Oakridge Centre fulfills the criterion for publicness in that it provides for continuity of movement space. However, the public quality inside is independent from the overall publicness of exterior spaces. The interior publicness is an isolated interpretation of exterior characteristics.

Harbour Centre is an example of an isolated system which does not follow the circular organization as analogy to the exterior movement system. Harbor Centre is a two storey shopping centre on the ground and basement level of a square city block (figure 32). The block is located at a slope towards the water front and therefore stairs have to adjust access to all entrances.

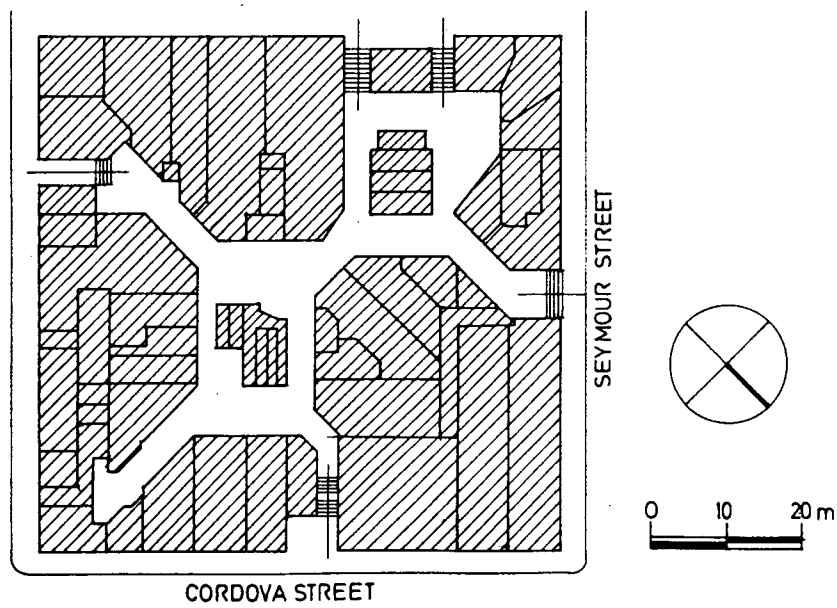

Figure 32.
Harbour Centre: ground floor plan of the upper level
Source: Administration Office, Harbour Centre (redrawn by the author)

The organization of the movement system demonstrates a situation in which neither a sufficient spatial relationship nor an analogous relationship to outdoor space are developed. The paths connecting the interior space with the outside are emphasized and create a star-like structure. However, the outdoor movement routes are not extended into the inside. Coming from the outside the inner streets are bent at the entrances. The sightlines are thus very short, which makes orientation difficult. Pedestrians entering the centre and exploring it face dead ends and exits.

The interior system does not create a structure in ring form as analogy to the outdoor movement system. This results in a confusing interior space. The structure expresses itself as a private and specialized place rather than a public space.

4.3. Summary

The field studies emphasized three types of relationship between interior and exterior spaces:

The spatial relationship

The spatial relationship enhances the public quality of interior spaces if it connects significant outdoor places. The success of interior spaces depends on the liveliness of outdoor spaces.

Extensions of the exterior movement space

Interior spaces which serve as extensions of the exterior movement space tend to disperse public activities rather than to concentrate them. Dead-end streets promote a specialized controlled and private atmosphere. The lack of *through movement* reduces public liveliness.

The analogous relationship

Interior spaces which adopt the exterior movement pattern as an analogy enhance their public quality, even though they isolate themselves physically from the exterior. The public quality is

reaffirmed by a continuous movement system. Analogous forms and structures interpret the outdoor street. Interior shopping spaces are connected by the common idea of creating an outdoor analogy. By creating a transpatial analogy between each other, shopping centres develop a common public space system which is not spatially but transpatially connected. Visual images support an analogy in a simple way - by sign association. The analogous isolated organization of chain stores, for example, demonstrates this phenomenon. The repetitive appearance in public space creates an image, a symbol of publicness, which is valid wherever it appears. On the one hand internalization supports an independence from the surrounding place, but on the other hand, it creates a dependence on stereotypal architectural arrangements.

The public quality of interior spaces is enhanced if a structure is created that is analogous to outdoor space. Publicness can be further enhanced if buildings also relate to outdoor space in a spatial relationship. Accordingly, a high public quality in interior spaces is achieved if interior spaces are part of the outdoor movement system and create simultaneously an analogous relationship to the exterior.

Chapter 5

The global order in public spaces

In this section selected interior spaces are examined according to one aspect of the criterion of *orientation*. The potential of interior space to enhance orientation by providing a *global order* is examined. As defined in chapter one (page 33), the organization of the movement system in a global order gives people a clear understanding of their present location at every point within a movement system, and an idea about the structure and size of the whole movement space system.

Interior spaces by definition separate themselves from surrounding exterior space; individual functions are typically distributed over a number of different rooms. The organization of interior spaces as public spaces demands not only the coherence of these individual spaces, but it also demands clues about the global organization of the individual spaces.

5.1. The global order in outdoor public space

Public space can be described as a sequence of individual spaces and local activities within these spaces. In traditional settlements, the additional quality of a global order can be perceived. People cannot only see *that* they are in public space, but to some degree also *where* they are in relation to the whole settlement system. Lynch describes the phenomenon as follows:

> "A settlement is a valued arrangement, consciously changed and stabilized. Its elements are connected through an immense and intricate network, which can be understood only as a series of overlapping local systems, never rigidly or instantaneously linked, and yet part of a fabric without edges. Each part has a history and a context, and that history and context shift as we move from part to part. In a peculiar way, each part contains information about its local context, and thus, by extension, about the whole" (Lynch, 1981, p. 116).

In his urban theory *Collage City* (1978) Colin Rowe points out the principle that, although urban structures are built out of individual separated parts, they develop a structural wholeness. Relating to collages of Le Corbusier, he describes the relation of individual parts to the whole system:

> "Objects and episodes are obtrusively imported and, while they retain the overtones of their source and origin, they gain also a wholly new impact from their changed context" (Rowe, 1978, p. 140).

Hillier and Hanson stress that the overlay of local activities and a global structure is the basis for continuous control and encounter of people. Hillier and Hanson distinguish between 'strangers' who move through space and need a global structure to orient themselves in public space and 'inhabitants' who occupy spaces locally; they conclude that

> " ... traditional systems work because they produce a global order that responds to the requirements of the dual (inhabitants and strangers) interface ... . The principle of urban safety and liveliness is a product of the way both sets of relations are constructed by space" (Hillier and Hanson, 1984, p. 140).

As Hillier and Hanson further point out (1987), in traditional settlements the length of sightlines is an indicator of the public character of the street. Long sightlines connecting many local spaces give strangers in public space more information about the global structure of a settlement than a series of short sightlines. Curves and corners on the way through the settlement, however, support the involvement of people with local activities more than a global orientation.

According to the results of the *Syntactic Analysis of Settlements* (Hillier and Hanson, 1987) traditional settlements achieve a global structure by connecting the most publicly used spaces with sightlines. These sightlines lead directly from the entrance of the settlement to the core:

> "Urban market places in European countries, for example, wherever they are geometrically in the settlement, are nearly always axially shallow from the outside, and have the curious, though intelligible property that the axial lines

> in their vicinity are strong an lead to the square but never through it" (Hillier and Hanson, 1984, p. 17).

Other spaces which are less used by strangers and are less part of the public routes are subordinated under these global axes. The global system remains the same in subordinated structures. Hillier and Hanson describe these conditions with the example of the City of London:

> "In the original dense parts, in and near the City of London, there was always a system of streets and a smaller system of back alleys and courts: yet at both levels the governing principle was that important foci or meeting points were usually no more than two axial steps apart, implying that there would always be a point from which both foci could be seen" (Hillier and Hanson, 1984, p. 18).

In the following, interior shopping spaces are analyzed to show their potential to develop global structures.

5.2. The global order in interior public spaces

Interior spaces usually give only limited information about the spatial organization. Entering one room of a building does not necessarily inform one about the whole organization of the interior. Only the movement through the building makes the orientation possible. In most shopping facilities, public spaces are distinguished from individual spaces of shops by different types of contrast. Public circulation spaces, for example, often have a continuous surface, repetitive ceiling patterns or a continuous ceiling height. However, the clues are only of local importance; they show people that they are in public space, but not *where* in public space. Interior shopping facilities should also indicate how the global space system is organized. The global structure supports orientation and encourages to use the system.

The observations show three different types of global organization in interior public spaces:

(1) sightlines
(3) centres
(3) hierarchies

The three types indicate different constraints and opportunities which are discussed in the following section.

5.2.1. Sightlines

Long visual sightlines in interior public spaces serve to orient people and to assist their understanding of the global structure. However, the view along sightlines in interior spaces is influenced by the height of the ceiling (figure 33). Low ceilings prevent an overview and tend to reduce the degree of orientation.

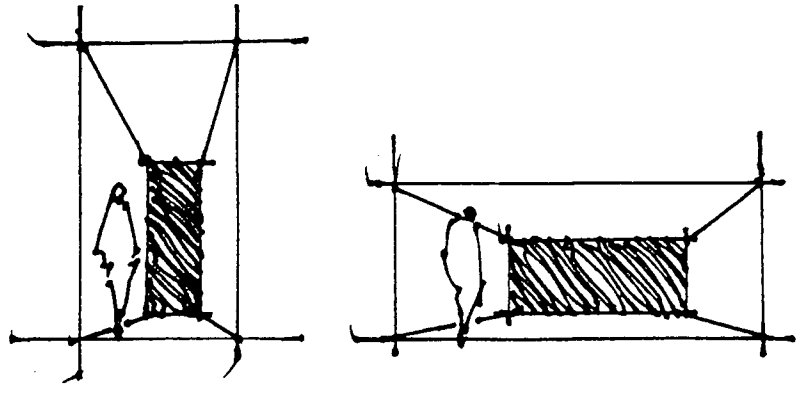

Figure 33.
more orientation in high rooms through an unobstructed sightline

The low degree of orientation in public spaces is a common problem in downtown underground malls which have a low ceiling height. In the *Pacific Centre,* the contrast between circulation space and shop space is specified by a horizontal continuity and a repetitive system of local activity islands. The islands are emphasized and reinforced by the pattern of artificial light in the ceiling (figure 34).

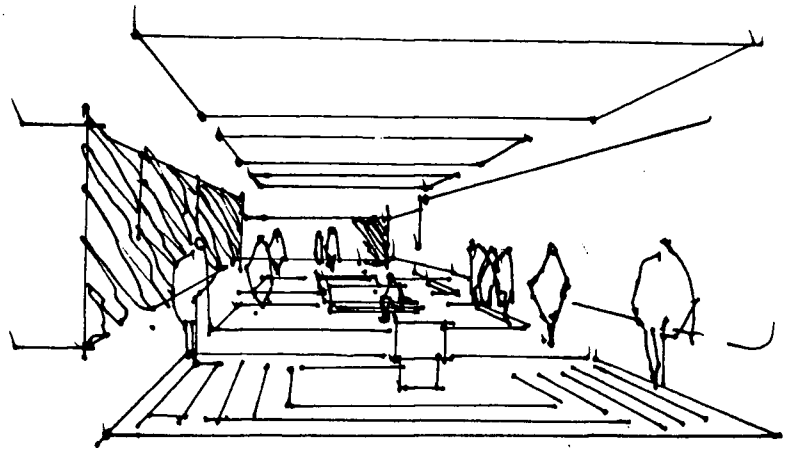

Figure 34.
Pacific Centre: relationship between ceiling and floor

The global structure of the mall, however, is not clearly legible. The visual sightline is shortened by the low ceiling height of 3.35 meters. The mall allows an unrestricted view only up to 40 meters. The street furniture of the activity islands further limit orientation. Movement spaces with a high vertical proportion support the global orientation by providing a longer sightline. The *Willowbrook Mall,* for example, with a ceiling height of 4.45 meters, allows an unrestricted view up to 70 meters (see figure 13).

Bentall Mall, the *Charlyle,* or the *Royal Centre* have ceiling heights of about 2.75 meters. The low height promotes the impression of a room (figure 35).

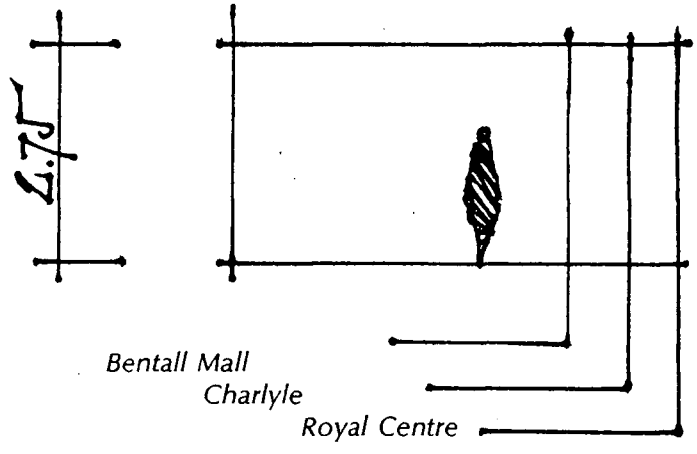

Figure 35.
Bentall Mall, Charlyle, Royal Centre: section through the major movement paths; scale 1:100

All these malls distinguish public movement space from the adjacent shops by emphasizing the character of another room rather than the creation of a global structure. The malls tend to compensate for the loss of a global structure by emphasizing the contrast between the interior circulation space and the individual shop space.

The continuous repetition of elements in public movement space can emphasize its coherence but not its global form. In the *Harbour Centre*, for example, the movement space shows a characteristic ceiling leading through the centre (figure 36).

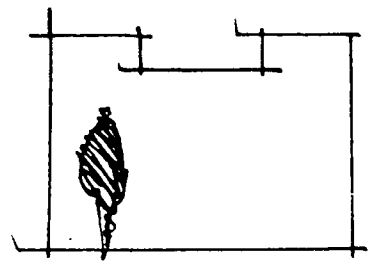

Figure 36.
Harbour Centre: section through the movement path, scale 1:100

However, it is impossible to identify the global system. In particular at places where different movement directions come together, it creates an unclear situation and gives no information about the global structure of the whole system. *Harbour Centre* does not emphasize the global structure with sightlines and therefore the orientation is difficult.
Collectively, the provision of sightlines is a possible way to create a global order in interior spaces. However, a low ceiling height can reduce the global order significantly. Accordingly the public quality of an interior space depends on a certain height.

5.2.2. Centres

An effective way of organizing a global interior structure is to reinforce a centre at the crossing of paths. As the observations indicate, the quality of a global structure defined by a centre depends on a short connection between the entrances or other centres (figure 37).

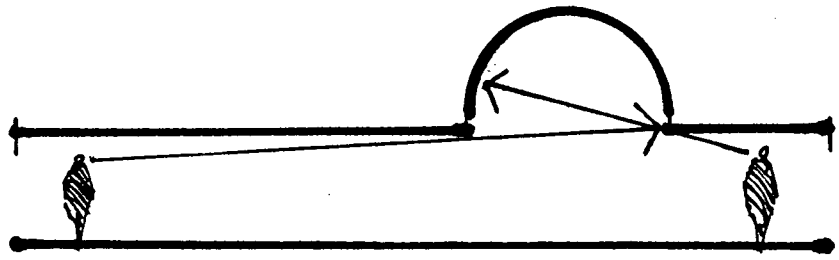

Figure 37.
Centres: short distances between centre and entrances enhance orientation

At *Sinclair Centre*, for example, the square is located at the edge of the street crossing (figure 38). A diagonal movement pattern crosses through it and aligns with the elevators of the *Federal building*. The square is surrounded by shops, restaurants and cafes. The openness of both the major public movement spaces and the square is emphasized by skylights.

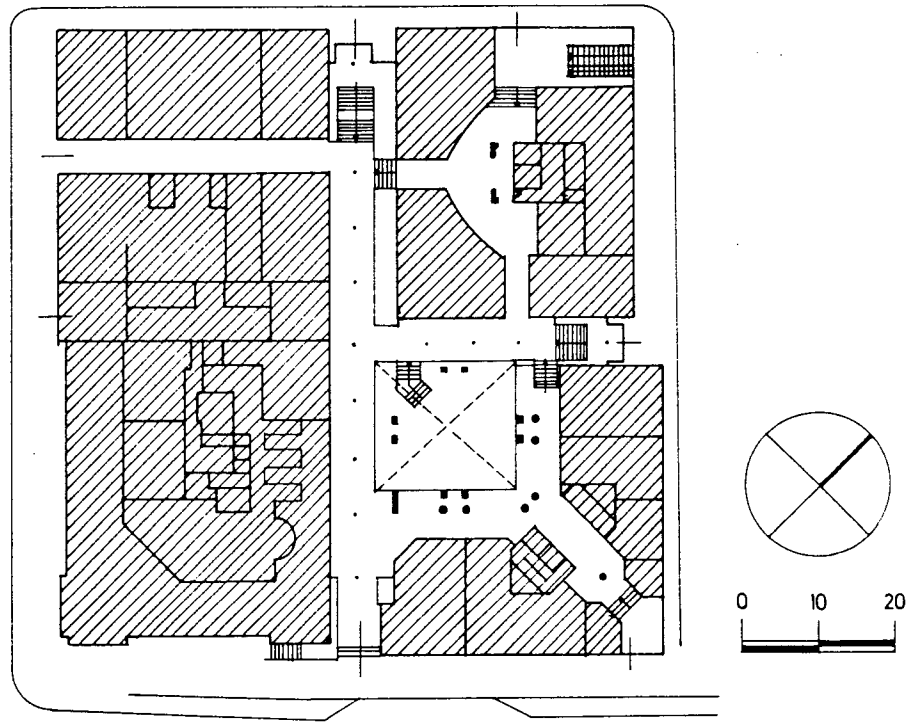

Figure 38.
Sinclair Centre: ground floor plan of the upper mall
Source: Administration Office, Sinclair Centre (redrawn by the author)

The perception of a global quality of centres depends to a large degree on short distances with straight sightlines from the outside. In contrast, in the *Harbour Centre* (figure 32) the sightlines toward the centre of the mall are interrupted and do not allow a view deep into the interior space; the possibility for pedestrians to achieve a global overview is diminished.

Another example is the organization of the *Bentall Centre* (figure 39). There are certain areas which can be described as centres, as for example the food floor; however the paths leading to the centres are too long and their sightlines are broken several times.

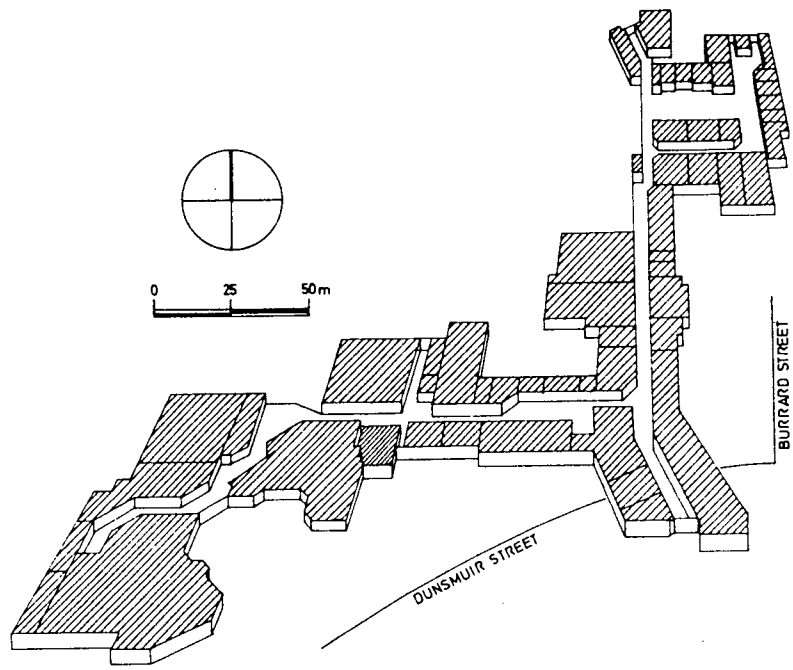

Figure 39.
Bentall Mall: movement paths
Source: Administration Office, Bentall Centre (redrawn by the author)

The organization of the *Bentall Centre* is determined largely by the buildings and the structure above it. The mall serves only as an underground link between the individual *Bentall Towers*. The ground level is a clearly identifiable global organization whereas in the underground a labyrinthine structure reduces orientation.

The combination of the concept of the center with the idea of sightlines provides sufficient orientation even in large interior spaces. The large parallel hallways of the *Oakridge Centre*,

for example, structure the interior circulation space by providing centers and sightlines (figure 40).

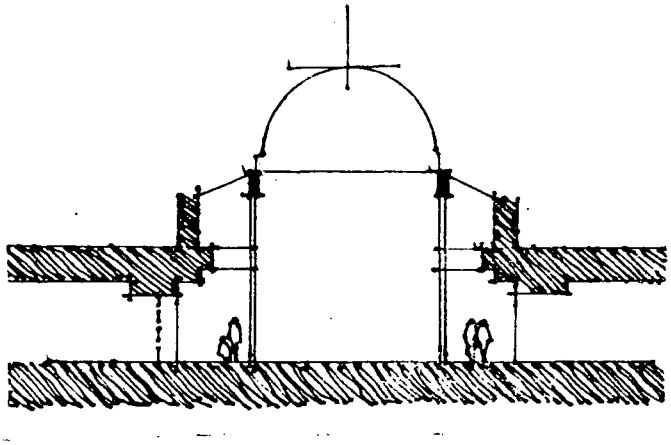

Figure 40.
Oakridge Centre: section through one main hallway; not to scale

5.2.3. Hierarchies

A global order can be expressed by detaching the individual shop structure from the overall building envelope. Interior shop structures become the *in-fill* in a larger space, the *envelope*. Public circulation space is the space between the boundaries of the shop and the boundary of the envelope. Pedestrians can at every point see a continuous architectural form over local, in-filled forms. A hierarchical structure represents the overlay of the concept of sightlines with the concept of the centre. The outer boundary of the building, the global envelope, can be described as extended centre, whereas the movement directions given within the global envelope follow the principle of sightlines (figure 41).

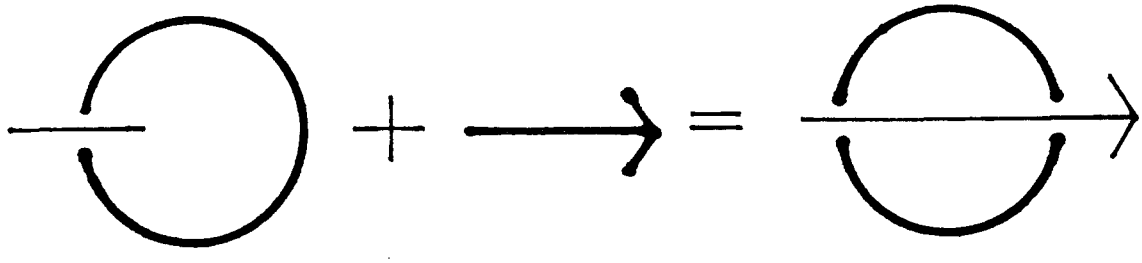

Figure 41.
Hierarchy: the combination of sightlines with the concept of the centre

As the observations of hierarchically organized structures show, both components, the global envelope and the movement directions, have to be indicated in order to promote a public quality. The information about the movement direction can be defined by both (figure 42):

(1) the envelope
(2) the in-fill

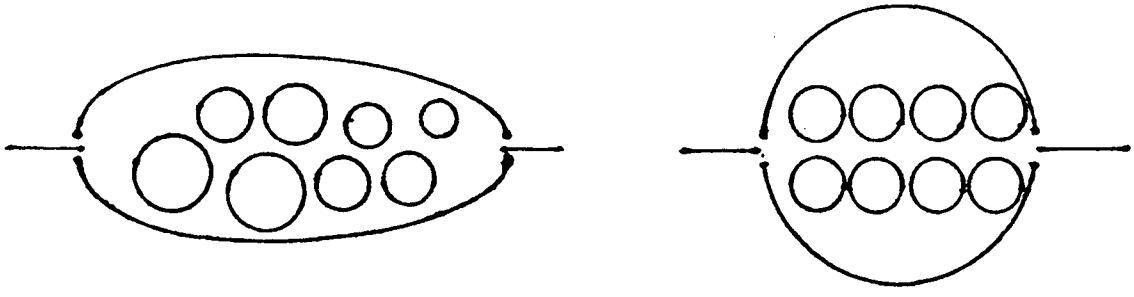

Figure 42.
movement direction defined by the envelope
movement direction defined by the in-fill

5.2.3.1. Definition of the movement paths by the envelope

The envelope indicates the global character and the movement directions; the in-fill creates variations and activity pockets.

One example of the definition of the movement direction by a global envelope is the *Station* at *Cordova* street (figure 43).

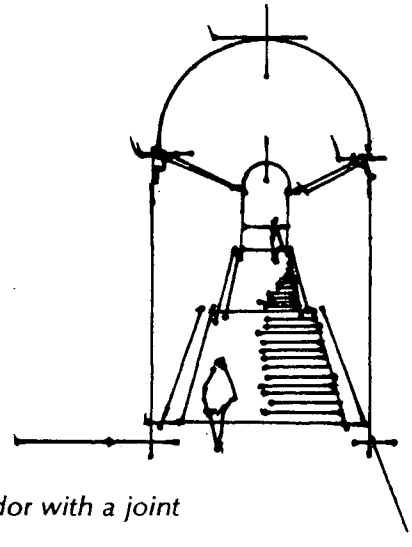

Figure 43.
the Station: differentiation of stairs and corridor with a joint

The longitudinal corridor defines the movement direction and provides a global coherence. People can orient themselves along the form of the corridor until they leave the building again. The path coming from *Granville Square* leads down over stairs to the concourse level where it crosses a wide entrance hall. A vault emphasizes the corridor as a movement space in the wings of the building. The stairs coming from *Granville Square* are defined as in-fill. A joint space separates the stairs from the wall of the corridor.

The *Robson Fashion Park* also stresses the hierarchical concept by extending small shop units into a wide open hall (figure 44).

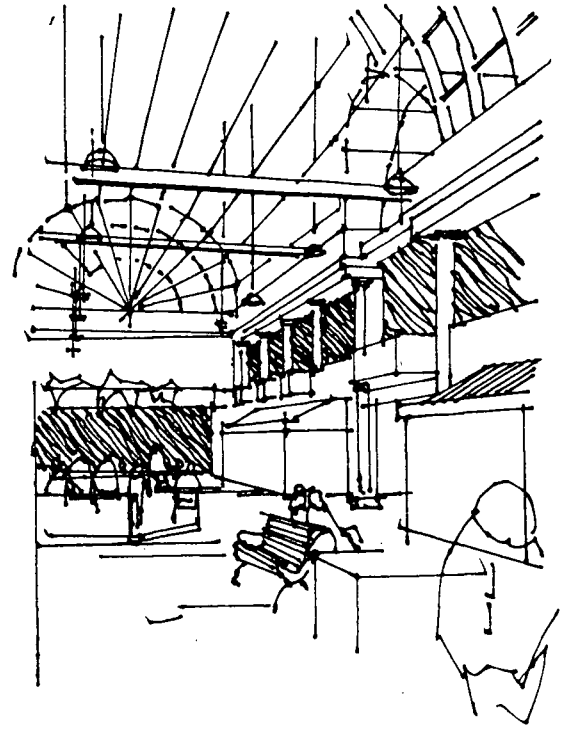

Figure 44.
Robson Fashion Park: interior public space

The global structure is further emphasized by attaching outdoor symbols to the facades on the upper storey. Small balconies above the individual shops with plants symbolize facades which face an exterior street.

Another example of the definition of movement paths by the global envelope is the shop *Leone*, located in *Sinclair Centre* (figure 45). The longitudinal direction of the former hallway motivates pedestrians to move through the space. Individual counters are extended into the hallway and modify the movement path. The public character of the space is supported by direct connections to public outdoor and indoor movement spaces. This idea shows clearly the difference from the organization of a department store.

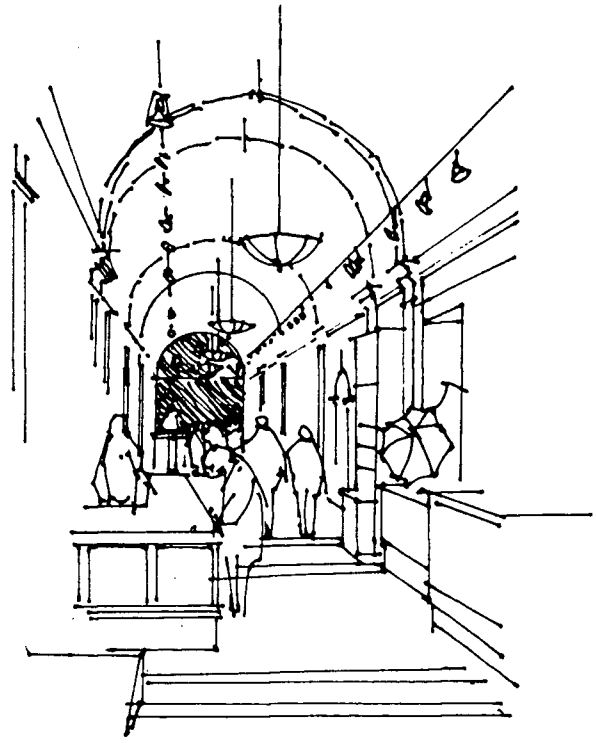

Figure 45.
Sinclair Centre: the open side-corridor

The department store does not provide any spatial definition of the movement direction. The public movement space is not separated from individual shop spaces by vertical boundaries.

5.2.3.2. Definition of movement paths by the in-fill

In this section, one example is presented where the shop facades define the public movement space. The outer envelope of the space shows the global character but not the global movement direction.

The *Netloft* on *Granville Island* (figure 46) differentiates between in-fill and the global envelope by detaching the shop facades from the ceiling.

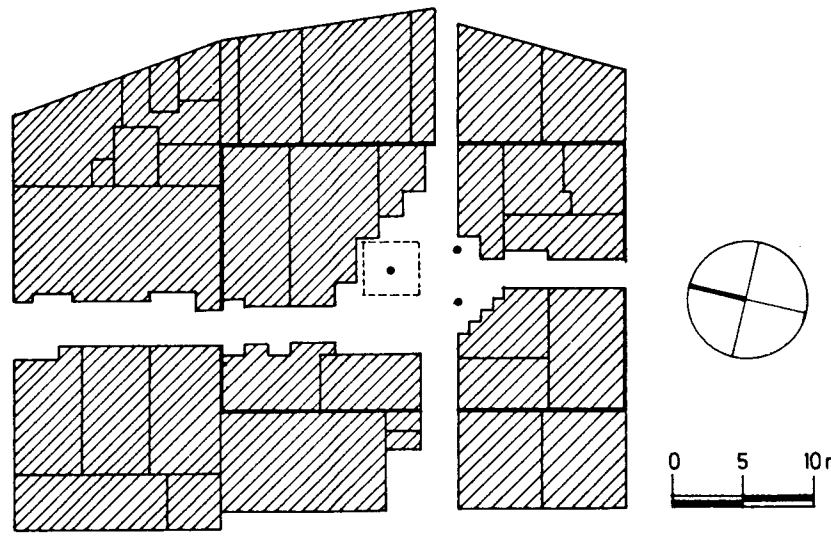

Figure 46.
The Netloft: ground floor plan
Source: Administration Office, Granville Island (redrawn by the author)

The shop facades define the movement routes whereas the envelope defines the global character of the space (figure 47). The effect is significant. People enter through the outer envelope, the primary boundary, but maintain continuous visual contact. The global envelope is visible everywhere and the overview of the space is facilitated. The boundaries of the shops, which are secondary boundaries, have a height of 2.40 meters and are strong enough to define the edges of public space.

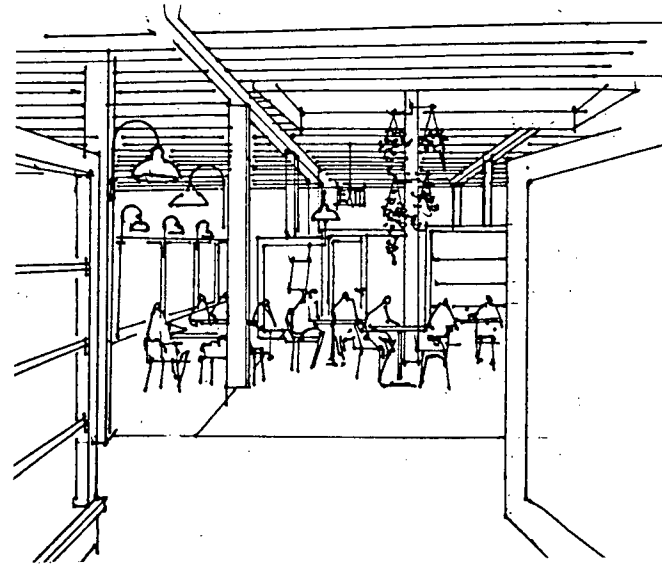

Figure 47.
The Netloft: interior public space

The detachment from the ceiling creates the impression of a wide space, although the ceiling at some places is very low 3.30 meters. The width of the access spaces is between 2.40 meters and 2.75 meters; this is surprising because the space is perceived as much wider. The detachment from the ceiling has the further advantage that one can balance different ceiling heights.

The solution of the *Netloft* indicates that also interior spaces with low ceilings can express a global order. The concept of the hierarchical distinction between movement spaces and local activity spaces is more useful than the idea of contrasting elements for interior public spaces with low ceiling heights.

However, the *Netloft* is a relatively small space; the paths are only approximately 45 meters long. The orientation in larger systems would probably be reduced despite of a hierarchical organization.

The lowering of the secondary boundary follows the idea of an indoor market, as for example, the *Granville Island Market*: facades are replaced by counters and the global structure is expressed by the envelope of the building.

5.3. Summary

The field studies indicate that a global order can enhance the public quality of interior spaces. In many downtown malls the limitations for a global order is a result of the priority of private space over public space. If public space in buildings is given the priority over private interior spaces, a high degree of orientation and public quality can be achieved.

The observations suggest that the global order (and therefore the spatial orientation in interior spaces) can be enhanced by emphasizing three characteristics:

Sightlines

The depth of a sightline into a space determines the degree of orientation in an interior space. The length of a sightline depends on the height of the ceiling. In many downtown underground malls the orientation by sightlines and subsequent public quality is limited by low ceiling heights.

Centres

People can orient themselves in interior space if they can visually connect their location to a centre. Visual orientation may be reduced if the centre cannot be perceived from every point within the public circulation system.

Hierarchies

A visual distinction between the enclosing envelope and interior subdivisions can enhance the global order by combining the notion of sightlines and the concept of the centre. When the surrounding envelope is visually apparent, building users readily perceive a global order within a large centre. The subdivision of the space into different movement spaces creates sightlines.

The three characteristics often appear in combined forms. Hereby it can be observed that the combination and agglomeration of centres and sightlines provides sufficient orientation even in larger interior spaces. By contrast, the global order achieved by only using a hierarchical organization seems to be limited to small spaces.

Chapter 6

Conclusion

This thesis has described the phenomenon of internalization and the potential publicness of interior spaces. A set of criteria was used to evaluate the public quality of outdoor spaces and demonstrated their applicability to interior spaces. Within this process the criterion of 'choice', 'continuity of movement space' and 'global order' were found to be most relevant. A series of field studies was made of several interior Vancouver shopping facilities with different degrees of publicness.

6.1. Non-architectural limitations

Some interior spaces exhibited significant constraints in their ability to function as public spaces. However, many limitations of these spaces can be ascribed to non-architectural factors.

The analysis of interior spaces according to the criterion of 'choice' indicated that the interior publicness is limited mainly by economic interests. The primary function of shopping centres is to provide an attractive atmosphere for the interface between customer and merchandise. Public activities are only encouraged provided that they form part of the merchandising process. Accordingly, only a limited range of activities takes place in interior spaces. The architectural framework mainly supports the customer/merchandise interface and not necessarily social interaction. Subsequently, the public quality of these spaces is limited.

In many cases, since interior space is often physically separated from the surroundings, this is exploited to create an independent environment. The isolation from the surroundings allows

control over activities and spaces. By the withdrawal from a continuous movement system interior spaces become specialized and lose their public quality.

The ability of pedestrians to orient themselves is limited in many interior spaces because public space is subordinate to private space. Many underground malls present no global order to their users and are often confusing environments with a diminished public quality.

Wherever the public quality of interior spaces is limited, it is not solely due to architectural reasons. Many shopping facilities examined in the thesis indicate that interior spaces can provide an elevated public quality. However, in the same way as architecture can be used to enhance the publicness of interior spaces, it also can be used to limit the public quality of interior spaces.

The thesis demonstrated that interior shopping spaces have a considerable potential to express their public quality. In this concluding section of the thesis, directives are presented which support the public quality of interior shopping spaces.

6.2. Directives for the enhancement of the public quality in interior shopping spaces by architectural means

The case study of a downtown area in Vancouver indicated the relationship of the externalized and the internalized model. Both models are overlaid but isolated in the urban structure. Consequently, the public quality of both interior and exterior public spaces is reduced. The findings suggest that interior public spaces in a purely internalized model can improve their public quality by developing structures which follow the same criteria as exterior public spaces.

Moreover, the findings also demonstrate that the public quality of interior spaces is further enhanced if the internalized and the externalized model promote an interaction between each other.

The analysis of interior spaces according to the criteria *choice, continuity of movement space* and *global order* clearly suggests two types of directives for the improvement of publicness.

(1) Directives which support interior conditions analogous to exterior spaces

(2) Directives which support the interface between interior and exterior public spaces

6.2.1. Directives which support interior conditions analogous to exterior spaces

Interior public spaces which isolate themselves from the surrounding outdoor environment typically develop circulation patterns, forms, and details analogous to exterior space. This section presents directives which can enhance the public quality in these interior spaces.

Low degree of specialization

Public spaces have a low degree of specialization and serve many different activities. The potential range of activities in shopping facilities is typically limited to the activity pattern of merchandising. In such situations, publicness can be enriched if public spaces serve additional functions. The provision of other services, like workshops, offices or schools, around one common public space promotes the interaction between different types of activities and enriches the experiential quality of public spaces.

Low boundaries between activities

Activities in public space are typically separated only by physical boundaries, minimal or permeable that enable many activities to be observed simultaneously. The edges which separate different spaces and activities play a significant role. Permeable edges allow people to

take part in adjacent activities to some degree without being completely involved. Since the step to a direct interaction is minimal, people can easily get involved in an adjacent activity.

Independence of public space from activities

Public places provide space for many potential activities which may involve either a few or a large number of people. To attract people public space should create an atmosphere independent from potential activities and above all, must not convey the impression of 'emptiness'. Details and elements in public space should not suggest too many potential activities in one place. The impression of emptiness can be avoided by using elements and details which serve no specific functions. Secondary seating places, for example, are preferable to primary seating places. If they are not occupied, the place does not necessarily appear empty. Elements which indicate the use by many people such as many tables and chairs can create an atmosphere of emptiness. Another example are stairs; they are often preferable to escalators which imply the transportation of a high density of foot traffic.

Contrast of exposure and protection

The public quality of spaces can be reinforced by contrasting exposure and protection, movement and local activities, and a high and low density of people. The close proximity of these experiences promotes the impression of publicness. Accordingly, interior spaces have to provide zones which connect contrasting qualities. People for example, who sit on a bench that may be protected by a tree can at the same time observe the adjacent movements and experience a high degree of public quality.

Continuity of publicness

Spaces become specialized and isolated if they do not form part of a larger public circulation network. The continuity of publicness can be achieved by a continuous movement system. The organization of spaces in a continuous circular form reinforces public liveliness because it

connects and concentrates activities rather than dispersing them. A continuous overlay of local activities with movement activities also facilitates the continuity of publicness. A lack of continuous involvement supports the separation of public activities into single events.

6.2.2. Directives which support the interface between interior and exterior public spaces

Public quality can be increased if the activities in interior and exterior spaces reinforce each other. The enhancement of a direct spatial relationship between interior and exterior public spaces extends the publicness of an analogous but isolated relationship.

Priority of public space

A continuous network of public spaces, whether internal or external, must take priority over private space. Interior public spaces must not be seen as publicly accessible parts of private buildings; it should be part of the exterior public circulation system. Many downtown malls interpret interior public space only as an extension of public outdoor space into the private domain.

Dominance of exterior space

In the planning of large shopping facilities interior public spaces should be those which connect lively exterior places. If interior spaces remain the main gathering places for public activities the function of exterior space is reduced to pure access space. Only the equal consideration of interior and exterior public spaces can create a balanced system. Interior spaces can gain importance within the movement network if they serve as direct connections or even as shortcuts between two significant exterior destinations.

Adjacency of lively interior and exterior public space

Lively interior and exterior public spaces should ideally be adjacent to each other. If both spaces are separated by mere access space, the different public activities cannot reinforce each other.

Permeability between interior and exterior public space

The edge between interior and exterior public spaces should provide an easy transition. Wide entrances and shops which open to both interior malls and exterior streets will facilitate a direct transition. The opportunity to look directly into an interior space reduces the threshold between inside and outside. A common level access can reinforce the connection between interior spaces and the street. Interior spaces which are disconnected from the street by stairs or ramps inhibit a continuous movement between inside and outside.

Continuity of movement and involvement

The interior movement system should be a logical completion of the exterior movement network. The movement flow from outside to inside should have minimal changes in direction. The sightlines of the movement paths should extend from the interior to the exterior and vice versa. In addition, a continuous involvement of people along the edge with shops and other local activities leading from the exterior to the interior public space reduces the threshold significantly.

Continuity of environmental conditions

Environmental factors can strongly reinforce the connection between interior and exterior spaces. The use of natural light inside buildings enhances the public quality and the connection to the outside. Open entrances result in a smaller difference of temperature inside and outside buildings and minimize the perceivable distinction between them.

In conclusion, this thesis has shown that architects have the opportunity to improve interior public spaces. In particular the improvement of interior spaces with a high public quality depends on the provision of attractive exterior spaces. In order to create a lively interior publicness, the vitalization of an overall public quality inside *and* outside buildings has to be equally emphasized.

Interior spaces have the potential to offer a rich public experience and can contribute to an overall network of interior and exterior public spaces. The decision to make interior spaces part of an overall public system extends beyond solely architectural concerns and is a question open to society at large.

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Appendix

This appendix provides a brief description of the major buildings/shopping facilities referred to in the thesis.

1. Map of Downtown Vancouver (figure 48)
The map indicates the location of the downtown shopping facilities examined in the field studies. Included is the area of the case study between *Robson, Dunsmuir, Granville,* and *Burrard Street.*

Figure 48.
Map of downtown Vancouver
Source: City of Vancouver Planning Department

1. Area of the case study
2. Canadian Pacific Railway Station (Station)
3. The Landing
4. Sinclair Centre
5. Harbour Centre
6. Bentall Centre
7. Pacific Centre
8. Robson Fashion Park

2. Canadian Pacific Railway Station (figure 49)

601 West Cordova Street, Vancouver
Architects: Barott, Blackader, and Webster, 1912 - 14

Location: The longitudinal building is located on the water front parallel to *Cordova* Street between *Granville Square* and the *Landing*.

Function: The Station follows in its layout the classic tradition of North American railway stations. Today it serves primarily as *Sea Bus terminal* linking downtown *Vancouver* with North Vancouver.

Scale: The central waiting hall and the longitudinal hallway parallel to the water front is approximately two storeys high.

Circulation: A corridor parallel to *Cordova Street* leads over a long stair from *Granville Square* down through the central hall to the entrance to *Gastown*.

Services: The central waiting hall is surrounded by a few shops (office supply, bank, newspaper stand) and three fast food restaurants.

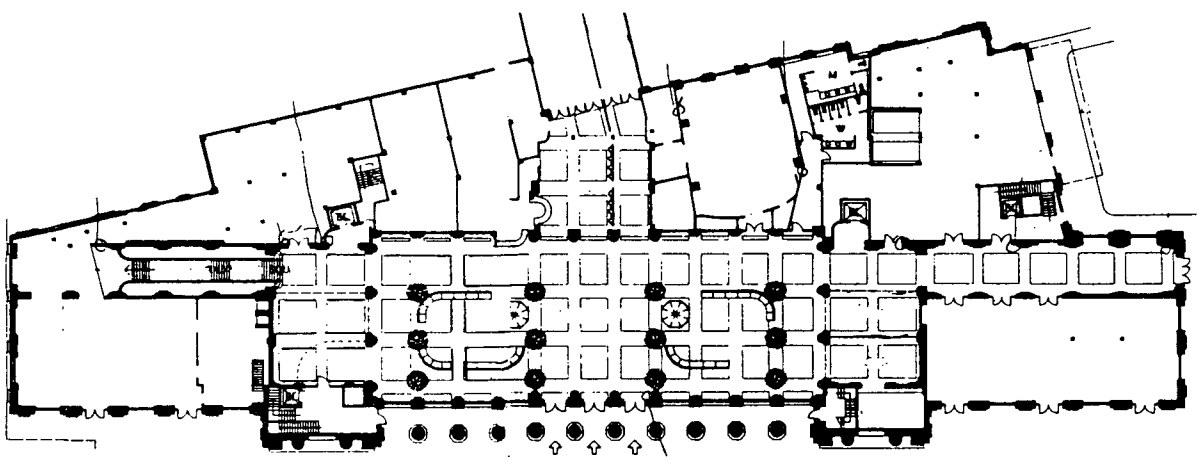

Figure 49.
The Station: ground floor plan
Source: Administration Office, The Station

3. The Landing (figure 50)

375 Water Street, Vancouver
Architect: Soren Rasmussen, 1987

Location: *The Landing* is located next to the *Station* at the entrance to *Gastown*.
Function: Dating back to 1905, the former warehouse today contains two levels of shops and restaurants, a parking level, and four levels of office space.
Scale: The interior structure is dominated by a two storey center space.
Circulation: An axis coming from the entrance leads through the center space and is visually extended to the exterior through a large window. The axis is strenghtened by the escalators which connect the two shopping levels. Restaurants and shops on both levels are arranged around the center space.
Services: The two shopping levels provide space for eighteen shops (fashion stores, food specialty stores, a newspaper stand) and three restaurants (one restaurant is directly located in the public center space. The shopping centre has 45.000 square feet retail space.
Characteristics: The original materials, brick and Douglas fir have been left exposed in many parts of the building.

Figure 50.
The Landing:
floor plan of the lower mall
floor plan of the upper mall

Source: Administration Office, The Landing

4. Sinclair Centre (figure 51)

757 West Hastings Street, Vancouver
Architects: Henriquez and Partners, Backwell and Partners, 1986

Location: *Sinclair Centre* is bounded by *Granville, Hastings, Howe,* and *Cordova Street.* The new concept of a shopping facility connects four formerly separate historic buildings - the *Post Office* (A), the *Federal Building* (B), the *Winch Building* (C), and the *Customs Examining Warehouse* (D).

Function: On two levels shops the complex provides restaurants and services. The upper levels of the individual buildings accommodate federal government departments.

Scale: The center space and the spaces at the entrances are two storeys, the spaces directly adjacent to the shops are one storey high.

Circulation: The interstices between the buildings are covered with glass roofs and serve as major circulation space. The two levels are open to a central square which is covered by a glass vault. A prominent stair leading diagonally into the plaza connects the two levels.

Services: The shopping levels provide space for approximately 20 shops with a variety of services, among them a book store, a flower store, a travel agency, a bakery and several fashion stores. A food fair, three fast food restaurants and cafes with tables directly in public space and three specialty restaurants offer their services.

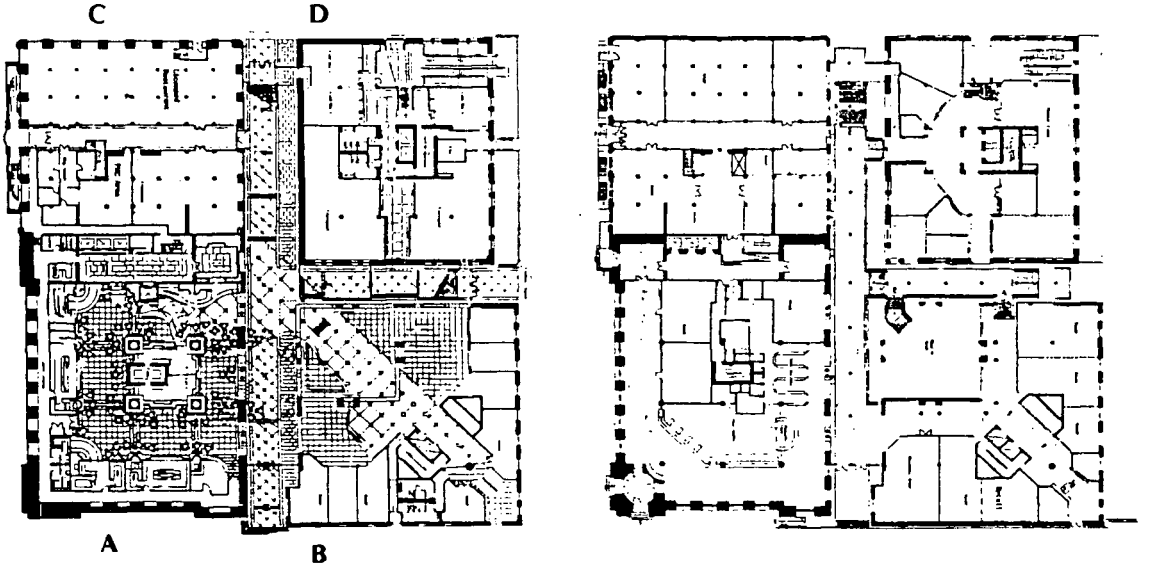

Figure 51.
Sinclair Centre:
floor plan of the lower mall
floor plan of the upper mall

Source: Administration Office, Sinclair Centre

5. Harbour Centre (figure 52)

555 West Hastings Street, Vancouver
Architects: Webb, Zerafa, Menkes, Housden and Partners, 1974 - 77

Location: *Harbour Centre* is bounded by *Hastings* and *Cordova, Richards* and *Seymour Street.*

Function: *Harbour Centre* consists of two mall levels, the Downtown Business Campus of *Simon Fraser University,* an office tower with 21 floors and a revolving restaurant on top of the building.

Scale: Both mall levels have a mall height of 2.70 meters. The width of the movement spaces varies between four and six meters.

Circulation: The upper level of the shopping centre is partly subgrade and the lower level is completely underground. The interior movement paths are laid out in star form. Entrances from all four sides lead to a centre space which contains the escalators.

Services: The two shopping levels provide approximately 70.000 square feet retail space for 40 shops, mainly fashion stores, a food fair and a food market.

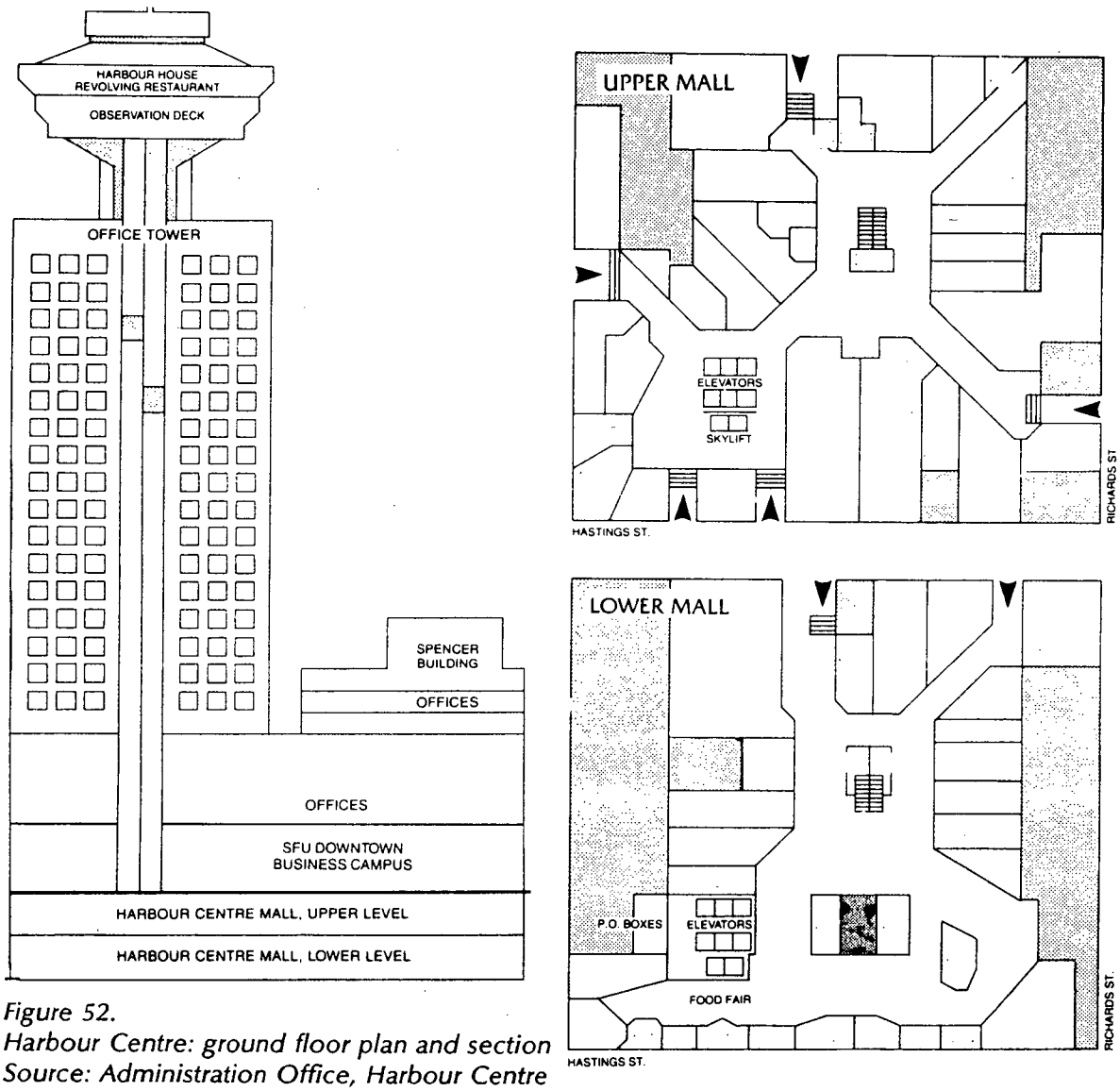

Figure 52.
Harbour Centre: ground floor plan and section
Source: Administration Office, Harbour Centre

6. Bentall Centre (figure 53)

Burrard Street above Pender Street, Vancouver
Architects: Musson and Associates, 1965 - 1973

Location: *Bentall Centre* is located at the corner of *Burrard* and *Dunsmuir Street.*

Function: *Bentall Centre* consists of four high-rises, a pavilion and an underground mall. The mall is accessible over stairs from the street or from the towers. The underground movement path links the individual towers and connects the complex to the *Sky Train.*

Scale: The underground path of the mall has at most places a ceiling height of 2.75 meters and a width varying between 4 and 6 meters.

Circulation: The course of the mall is strictly determined by the buildings above. The meandering path limits the orientation.

Services: The mall has over 50 shops and provides a wide range of services. 15 restaurants are the main attraction of the mall. The services concentrate primarily on daily needs, like banks, a post office, medical centres, or pharmacies. Only few fashion stores are located in *Bentall Centre.*

Characteristics: The shops along the edge are interspersed and do not provide a continuous edge involvement for customers. Long passages show blank walls on at least one side of the movement path.

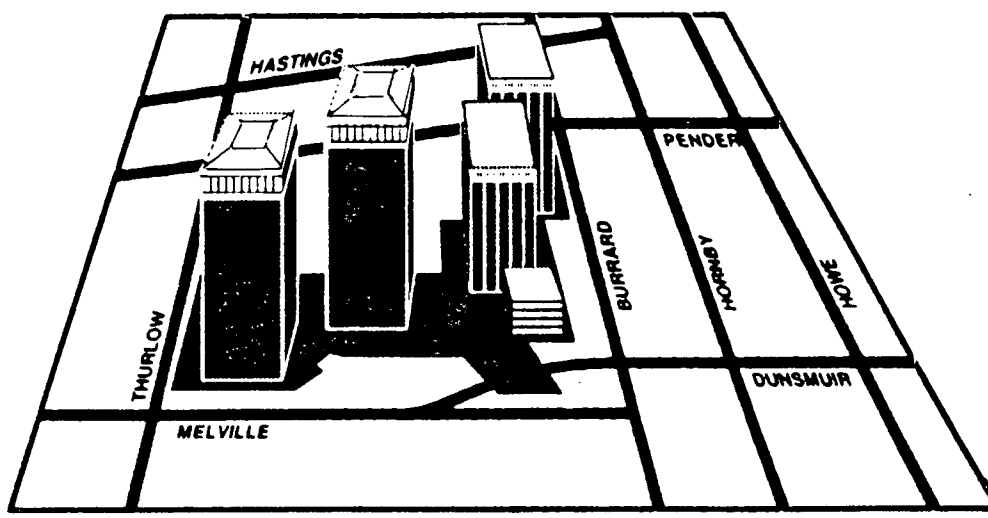

Figure 53.
Bentall Centre: axonometric view
Source: Administration Office, Bentall Centre

7. Pacific Centre (figure 54)

700 West Georgia Street, Vancouver
Architects: Gruen and Associates, 1969 - 76;

Location: *Pacific Centre* connects two city blocks underground under *Georgia Street* between *Granville* and *Howe Street*, and between *Robson* and *Dunsmuir Street*.

Function: The *Pacific Centre* is the base of the *Toronto Dominion Tower*, the *Four Seasons Hotel*, the *IBM Tower*, and the *Stock Exchange Tower*. The mall connects the *Eatons department store*, the *Bay* department store, and the *Vancouver mall*.

Scale: The mall has a ceiling height of 3.35 meters and a width of approximately 9.20 meters.

Circulation: The shopping centre is arranged on two levels. The lower level leads from the *Eatons* department store under *Georgia Street* toward *Dunsmuir Street*. People can leave the mall at *Dunsmuir Street* on street level since the complex is located on a slope running from south to north. The upper level leads from *IBM Plaza* toward *Dunsmuir street* and is connected to the lower mall level by escalators.

Services: The mall provides retail space for approximately 100 shops and specializes in fashion stores. In addition several fast food restaurants, a food fair, and a few specialty stores offer their services.

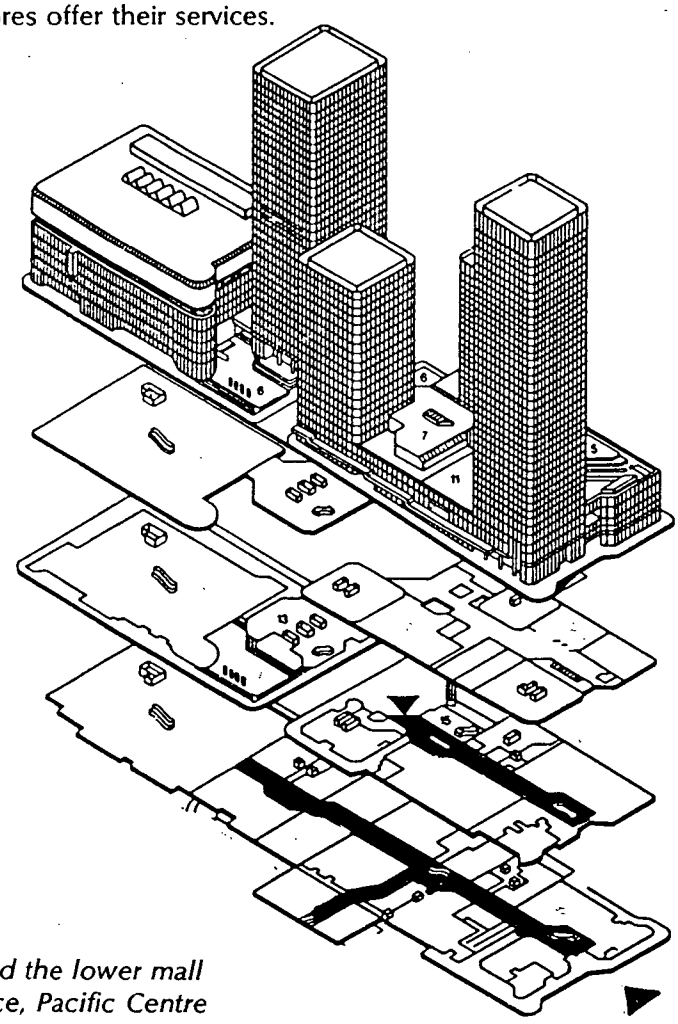

Figure 54.
Pacific Centre: the upper and the lower mall
Source: Administration Office, Pacific Centre

8. Robson Fashion Park (figure 55)

1135 Robson Street, Vancouver
Architect: Romses, 1987

Location: *Robson Fashion Park* can be accessed from *Robson Street,* an extensive shopping street. The longitudinal interior mall runs parallel to the exterior street.

Function: The mall provides access to different fashion stores. A glass vault covers the public interior space.

Scale: The mall is two storeys high, approximately 6 meters wide and 35 meters long.

Circulation: A wide entrance invites people who may be travelling along the sidewalk, into the long shopping corridor. At opening hours the mall is not separated by doors from the street space. An air curtain divides interior and exterior climate. The shops between Mall and street can be accessed from both public sides.

Services: The mall provides 16 fashion stores. A restaurant is located opposite to the entrance; the tables are placed in public space on a platform. A stair case at the entrance leads to another restaurant on the second floor.

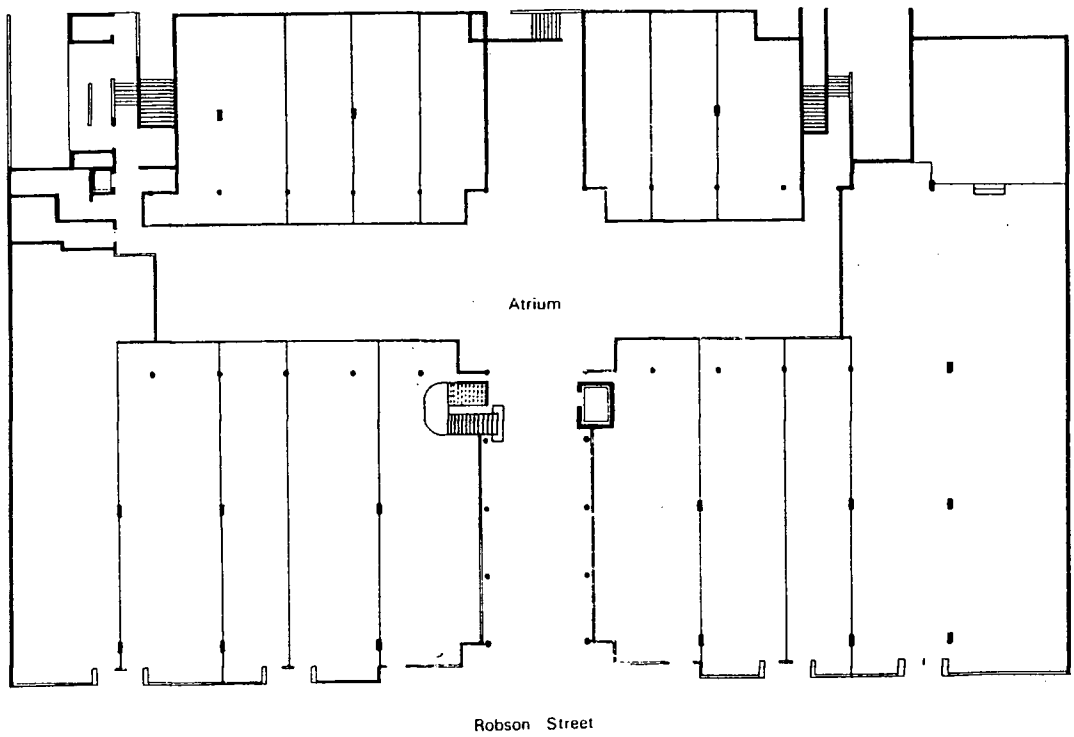

Figure 55.
Robson Fashion Corner: ground floor plan
Source: Arix Realty Corp; 885 W Georgia, Vancouver

9. Oakridge Centre (figure 56)

41st Avenue and Cambie Street, Vancouver
Architects: Armour, Blewett and Partners, 1986

Location: *Oakridge Centre* is a suburban shopping centre, located five kilometers from the central business district at the intersection of two major roads, *Cambie Street* and *41st Avenue*.

Function: The complex includes an interior shopping mall, an office and apartment high-rise, and rooftop and underground parkades.

Scale: Two parallel hallways covered by glass vaults structure the circular movement space. These spaces are two and a half storeys high and are connected with each other by corridors with lower, one storey high ceilings. The width of the main hallways is approximately 14 meters.

Circulation: The shops are arranged on one level along one movement circle having several access corridors. Escalators connect the mall with the parking spaces on top of the mall.

Services: The mall provides retail space for approximately 160 stores. The shopping centre has approximately 572.500 square feet retail space. A food floor and a department store are the main magnets of the centre. The mall contains a wide range of shops and offices, such as fashion stores, specialty stores, drug stores, or banks and insurance agencies. In addition, a variety of public services, like the Vancouver public library, and a post office is offered.

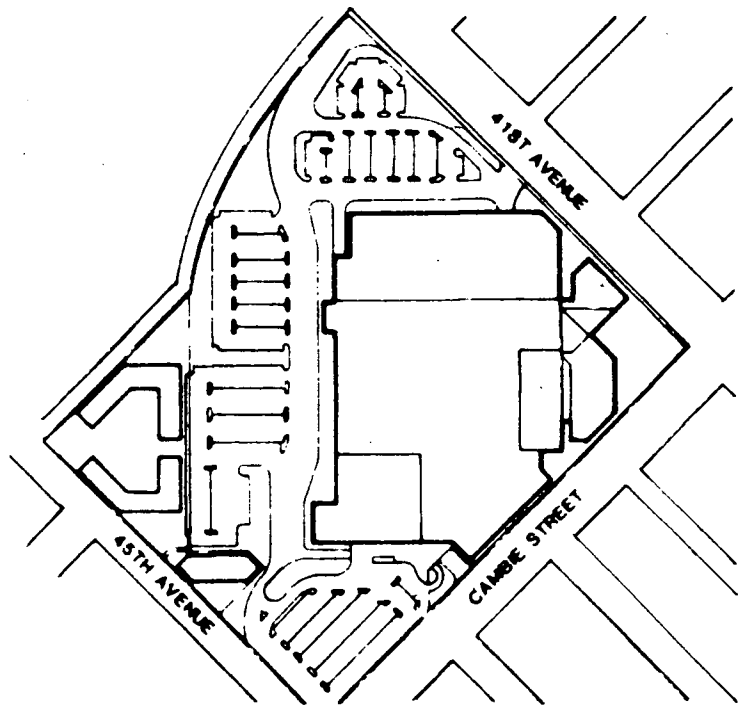

Figure 56.
Oakridge Centre: site plan
Source: Administration Office, Oakridge Centre

10. Netloft, Granville Island (figure 57)

Granville Island, Vancouver
Architect: McDonald, 1986

Location: The *Netloft* is located on *Granville Island*, a former industrial area at *False Creek*. In the early seventies *Granville Island* was transformed into a centre for commercial, industrial, cultural and educational activities.

Function: The *Netloft* functions as both workplace for craftsmen and shopping facility.

Scale: The paths leading through the building are approximately 45 meters long. The ceiling height is at some places 3.30 meters, and at the highest point approximately 4.45 meters high. The width of the public circulation spaces is between 2.40 and 2.75 meters.

Circulation: The island was designed for continuous pedestrian activities inside and outside of buildings. Therefore, the *Netloft* has entrances on all four sides of the building. The interior circulation is defined by the crossing of two paths at a centre place which offers seating space under a glazed square skylight and a small stage for public performances. Shop entrances are distributed along all exterior and interior public spaces. The *Netloft* consists of an outer belt of shops which are oriented towards the exterior space and an inner hall with shops around it. The hall is subdivided by 2.40 meter high partitions into a public movement space and the individual shop spaces.

Services: The *Netloft* provides 20 shops and workplaces. Some shops motivate customers to participate in creative activities; people can attend lectures in cooking or painting, for example. A small cafe offers chairs and tables in the centre space under the square skylight.

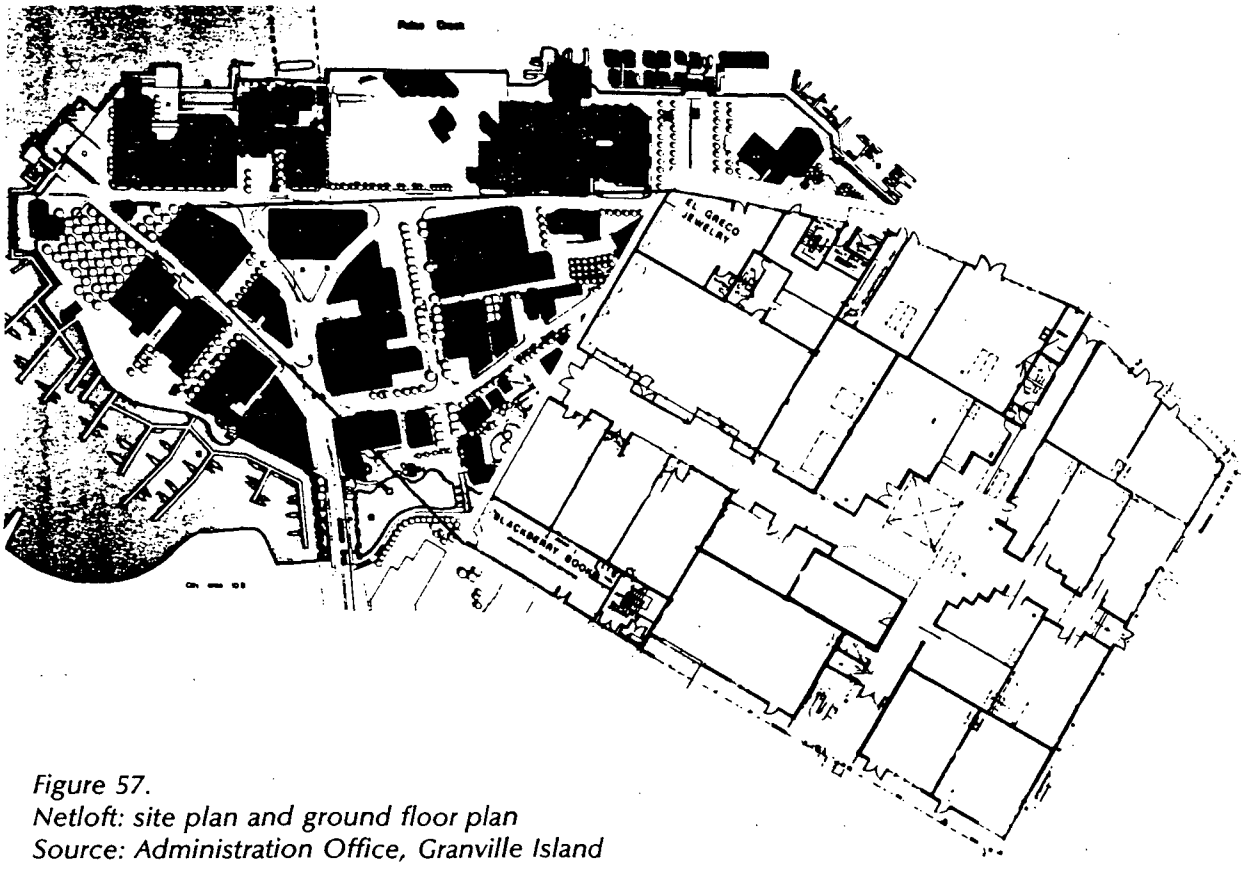

Figure 57.
Netloft: site plan and ground floor plan
Source: Administration Office, Granville Island