## THE DEVELOPMENT OF COMPLEX COMMERCIAL PROJECTS

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IN CENTRAL AREAS WITH SPECIAL REFERENCE TO

MONTREAL



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A thesis presented in partial fulfilment of the requirements for the degree of Master of Architecture at McGill University.

ΒY

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#### INTRODUCTION

The desire to obtain a perfect physical environment and a more satisfying way of life is typical of Western Civilization, since it possesses dynamic force and incorporates economic strife for progress.<sup>1</sup>

The Central Area of a city is generally considered as the focal point of both communal and commercial life. It is in this Central Area where the greatest concentration of human activities from all parts of the Metropolis exist.

Today, many problems of the city have been brought about by mass consumption, production, transportation and the population explosion. These forces have been responsible for city growth. Rapid city expansion has brought about air pollution, blight and slums, noise and traffic hazards. These circumstances are particularly evident in Central Areas.

The Central Area is usually located in the oldest quarter of the city, hence it tends to fall naturally into disrepair, especially if it has not been planned for the newer function of today's city.

"To some degree urban redevelopment is always going on in every city. 'Urban Renewal' has a broader meaning. It embraces not just redevelopment, but the repair, rehabilitation and improvement of structures. It means the whole process by which the older parts of urban areas adapt themselves, or should adapt themselves, to changing circumstances."<sup>2</sup>

Rosenau, Helen, "The Ideal City" p. 3.

Royal Commission, "Canada's Economic Prospects" Final Report. p. 304.

Since the end of the last war, there has been a keen realization of the need of urban renewal schemes throughout the world. By 1950, some of the major cities in the United States were planning urban renewal schemes. Today, most large cities in the world, especially in North America, are undergoing urban redevelopment programmes. Montreal, being Canada's largest city is in the process of a major redevelopment scheme; notably the two complex commercial projects - Place Victoria and Place Bonaventure - are to be completed for the 1967 World Exposition. Several others are presently under construction or on the drafting boards.

The birth of the Complex Commercial Project began by the construction of Rockefeller Center in the 1930's, but this Project was premature for that era. It was only from the 1950's that it really began to be used widely.

The present Complex Commercial Projects developed due to various circumstances in the Central Areas will be explained in detail in this thesis.

### PART I REVOLUTION OF COMPLEX COMMERCIAL PROJECTS

### Tendencies of City Central Area

The Industrial Revolution brought about the abrupt increase in production around the eighteenth century by the introduction of the factory system and the machine, which changed the whole appearance of the world. Each machine had its job, and each man his machine.

Division of labour reached its highest degree of development in the rising national economy and the world economy which finally emerged. The new production required increasing concentration of labour. Workers in great numbers had to be drawn together wherever manufacturing took place. This concentration implied the development of a labour market to meet the demands of industry. The inevitable consequence was the formation of large settlements which we think of as contemporary.

The industrialist who directed his work was the only remaining link of communal relationship. As the development of industry moves forward, in the end, the industrialist is no longer an individual, he is replaced by the large cooperation financed by banks or capital stock. Under the protection of such anonymity, there develops a freedom from responsibility and obligation unknown in other economics.

There are two forms of industrial production; prime production and manufacture. Each influences the settlement forms to which it gives rise. Prime production takes place where natural resources exist; it is relatively stable. Manufacture largely dependent on transportation facilities, must locate itself at favourable transportation centers. Both forms of production require aggregations of workers.

The purely industrial city, located at the source of raw materials and the manufacturing city, harbours not only large aggregations of labourers, but also great number of office workers. Variations occur in the manufacturing city according to the importance of a given settlement in industry or trade.

The coming of the railway made possible the development of even the remotest parts of the country. The railroads and the new steampropelled ships provided a system whereby goods could be transported to and from all parts of the earth. The mass concentrated in the great cities could then be supplied with food by comparative ease.

As the railroad and steam power once tended the people to centralize and concentrate in urban settlements, then electricity and motor vehicles are tending to decentralize them. Even before the advent of electricity, the tide had begun to turn. People who had been moving steadily into the city began to use the new suburban railroads to escape from the city, and to find new settlements beyond its limits. As the railroads were extended, settlements along their lines appeared farther and farther from the city center. The automobile accelerated this exodus, and widened its scope. But this dispersion has been a random one, and has therefore developed a chaotic suburbanization. Only with the development of electric power has genuine decentralization become possible. Electric power is the real force toward decentralization. Small settlements can then be established anywhere. New communities of relative independence can be built. Even the smallest settlement can be



supplied with water, electricity, heat and light.<sup>3</sup>

Under such revolutionary circumstances, the cities have grown up with no time to think of planning. The gridiron system, adopted perhaps to facilitate the sale of land in advance of growth, has determined the layout of the street and, making no distinction among the city's different parts, has become a guide to disorder.

"Industrial and mechanized transportation have made possible the creation and the rapid growth of the cities. But this growth, unplanned and undirected, has resulted in sheer chaos. Each part of the city effects other parts disadvantageously. Blight and slums appear. Traffic hazards increase. City dwellers began to desert the city for the suburbs. The very forces which created the city seem now to be destroying their creation."<sup>h</sup>

The Central Area was given the most attention in the United States; Civic Center notion developed, and the desire to show and plan by monumental groups that the city is a higher organism became a fashion. Civic Centers were planned and built in Chicago, Cleveland, St. Louis, St. Paul etc. There was a danger of over emphasizing this phase by lumping big buildings together without much spiritual or imaginative content, just to symbolize the civic idea. It was a though the planners had determined that the people must adjust themselves to the mightly formal arrangement. Though the entire development of a city was

<sup>3</sup> Hilberseimer, L. "The Nature of Cities" p. 105.
 <sup>4</sup> Ibid. p. 105.

essentially a derivation of human need, the civic center conception itself was one of removal from the life of the community rather than a functional entity with it.<sup>5</sup>

The rapid growth of Chicago during its short history is symbolic of our Industrial Age. Chicago expresses fully all the advantages and disadvantages of that age. Chicago's population grew by leaps and bounds. People from all over the world came to new mills and factories. Chicago boosters began to talk of the day when their city would contain forty-two million people within its limits. The city has grown so rapidly that there has never seemed to be time to consider planning problems and to develop planning principles. Chicago therefore, has grown without plan.<sup>6</sup>

Since the advent of the automobile, every corner in the city has become a death trap. "The People of Chicago," wrote David H. Burnham<sup>7</sup> in the introduction to his famous plan for Chicago (Figure 1) in 1909; "have ceased to be improved by the rapid growth or the great size of the city. What they insist upon asking now is - How are we living? Are we in reality prosperous? Is the city a convenient place for business? Is it a good labour market in the sense that labour is sufficiently comfortable to be efficient and content? Will the coming generation be able to stand the nervous strain of city life? When competence has been accumulated, must we go elsewhere to enjoy the fruits

Gallion, A.B., "The Urban Pattern" p. 80.
Hilberseimer, <u>op. cit.</u> p. 238.

Burnham, David and Bennet, Edward "Plan of Chicago"

of independence? If the city does not become better as it becomes bigger, shall not the defect be remedied? These are questions that cannot be brushed aside. They are the most pressing questions of our day, and everywhere men are anxiously seeking the answers." After Mr. Burnham's suggestions, Chicago would be reconstructed and disorder would be replaced by order. No new slums could grow. No wild suburbanization would take place. Traffic hazards would disappear.

"Parking problems would have at least found a solution. Such change could gradually be accomplished, preserving as much as possible of the existing city. The resulting stabilization would prevent deterioration and make real conservation possible. Chicago would become a city, healthy and good to live in. It might, indeed, with its parks and gardens, achieve at last its one-time goal, and become what it has supposed itself to be; Urbs in Horto, a city in a garden."<sup>8</sup>

Ebenzer Howard advanced (1898) idea of the garden city (Figure 2) was to solve the dwelling problem of the late 19th Century. Howard described a fanciful garden city laid out on a tract of some 6,000 acres of agricultural land. At its center he proposed a circular garden, and fronting on this garden, a group of public buildings. Outside of this, he proposed a zone of park and recreation field, and encircling this, a "crystal Palace" which was simply a ring of glass arcades broken only by the radiating streets, these arcades being used

<sup>8</sup> Hilberseimer, <u>op. cit.</u> p. 254.





for the display of goods and leisurely shopping. Beyond this arcade, Howard suggested five circular roadways upon which residences would be located. Outside this resident zone he also proposed to place the factories, warehouses, dairies, and farms with a railroad encircling the town and connecting with the tracks of truck line. This town was designed to accommodate 30,000 people.

More specifically, Howard proposed to build healthy communities of modest size, each own its own land, and surrounded by greenbelts beyond which a group of satellite communities might be formed. Metropolitan areas like London were to be emptied of their access inhabitants. A balance was to be struck between house and industry and between town and country.

Howard's concept was that of a self-sufficient community of maximum utility, convenience, and amenity, in which the advantages of urban living were to be secured to the greatest extent while retaining as much as possible of the best rural life. Idea about towns of rather similar principle around the central area were developed by James Buckingham in 1849, layout of the City of Victoria (Figure 3). The innermost square of Victoria is devoted to public buildings; the four outer rows of houses are graded to serve people of various incomes and vocations, the poorest classes to occupy the perimeter, since for them easy access to the open country appears particularly desirable.<sup>9</sup>

<sup>9</sup> Rosenau, op. cit. p. 138.

Half a generation later, Howard started another garden city, Welwyn, (Figure 4) and the fresh pattern of growth has laid the beginning of what is now a persistent movement toward urban integration.<sup>10</sup>

During 1920 to 1940, vehicular traffic increased, with the result that it had an important consequence on the whole city and central area. The central area radius was extended for business purpose, the great majority of the working suburban population depended on the employment in this area. Thus, during this period the central area gained in terms of volume of trade and income from land and buildings. Proportionately, the size of the central area did not increase very much. Experience started to show that the volume of business in the central area was directly related to the ease of accessibility by car and to the parking facilities available. Thus it became a necessity to redevelop the central area.<sup>11</sup>

"During this same period, many countries in various parts of the world began, sometimes almost unconsciously, to imitate the American way of life, at least in its external, more material aspect. Rapid urbanization has been one of the major characteristics of this way of life in our time. This process of urbanization altered a country's mode of living and working; not only the residential pattern but most of the economic structure as well. Land use and occupational distribution evolved accordingly; recreational habits were deeply

<sup>&</sup>lt;sup>10</sup> Mumford, Lewis "The City in History" p. 517

<sup>11</sup> Virak, Victor "The Form and Structure of the Central Areas of Particular Canadian Cities" p. 31.







Fig.4 Garden Cities - Letchworth (left) and Welwyn (right)

modified; transportation needs were completely reshaped. Services for health, safety and convenience of the urban population advanced further in a period of less than 100 years than in all past history.<sup>n12</sup>

After the end of World War II, the development consideration was taken up again, the aim being that all activities in the central area could function under the best practicable conditions. The main function of the central area being that of meeting and exchange, therefore, land uses should be most suitable for this function. Thus a definite trend developed towards rebuilding of city centers. By 1950, several cities in Europe had undertaken central area rebuilding programs, based on three principles.<sup>13</sup>

- City centers planned for the safety, convenience and pleasure of the pedestrian.
- City centers planned for the effective use of the motor vehicle.
- Building old and new appropriately related with one another.

Lower Morrmalm is the largest project of Stockholm (Figure 5) urban renewal. The replanning problem was to create suitable conditions for city activities of various kinds while maintaining a fair balance supply of places of employment and dwelling in the inner town.<sup>14</sup> Around Sveavagen, Sergels, Torg and Klarabergsgaten, the concentration of

<sup>&</sup>lt;sup>12</sup> Virak, <u>op. cit</u>. p. 32

<sup>13</sup> Brett, Lionel "The New City Centers of Europe" R.I.B.A. Journal June, 1950 p. 302.

<sup>14</sup> Markelius, S. "Stockholms C.B.D." Arkitektur No. 11, 1962.



Fig. 5 City Centre, Stockholm

office accommodation into five high buildings makes possible the creation of large open spaces and the provision of adequate light and air into the new commercial core. Above the second floor level of the stores and the podium of the office buildings, a vast connected area of roof gardens were created, providing a new and vital pedestrian area for relaxation, both for shoppers and office workers. At this level, cinema and cafes are located.<sup>15</sup>

After the war, the whole commercial center of Rotterdam (Figure 6) was completely cleared for reconstruction. The replanning of the Koolsingel is a perfect example in which the traffic routes are separated from the pedestrians shopping streets. "Developed co-operatively between a group of merchants are the town planning office, the Lijnbaan was a success from the start. This success was predestined inasmuch as the fundamental objectives of sound urban area development were set as prerequisites; complete separation of pedestrian and vehicular traffic; ample nearby off-street parking; attractive shops planned as a group; nearby high rise apartments; many cultural activities, pleasant open spaces. These combined to form a precinct or urban island with activities and urban life almost around the clock."

In summing up, it stands out that practically no attention was given to the development to Central Areas during the post Industrial

16 Miller, M. " New Life for Cities " p. 143.

Fliess, H. "Stockholm City Center "R.A.I.C. Journal, February, 1961 p.53.



Revolution. After the First World War, people began adopting a new way of life. This consisted of convenience and luxury. After World War II, there was a general improvement in traffic, more open spaces, and lower densities of population. The most significant change was the comeback of the plaza. The corridor street, the axial vista and the built-up round point were on the way out. Today, new doors are open to better design of buildings which tend to form a series of asymmetrical courts. This freedom is the first legacy of modern architecture to city planning.

#### The Rise of Skyscraper Office Building

The concentration of vast commercial interests within restricted areas raised the land values to such a degree that developers were forced to build skyscrapers to balance the effect.

In the decade 1880-1890 Chicago's population had doubled to reach one million and was still growing. The central area radius was extended for business purposes, the great majority of the working suburban population depended on employment in this area. Land in the business district was at a premium, and the only way to expand was up. So pressing was this need, that Chicago's architects have been attempting the seemingly impossible, mounting higher and higher with masonry walls.

In 1895 the Reliance Building consisting of 14 stories was the first skyscraper erected. From that period on, buildings of 10 and 20 stories were built, such as the Manadock (16 stories, 1893) and the Tocoma (13 stories, 1889). Further more, since the completion in 1923 of the 20 storey Tribune Tower of Chicago, with more or less vehemence

it has raged almost continually ushered in the skyscraper era.

Louis Sullivan, the originator of skyscraper building was the first who articulated the famous dictum "form and function." Since form should follow function, he began by analyzing that function of the area's contained in a skyscraper.

The ground floor was to be devoted to banks or shops. A second floor was to function as a mezzanine, accessible by stairway, this space Sullivan set behind a series or piers. From the third floor upward, Sullivan designed an indefinite number of stories of offices, piled tier upon tier, one office just like the other. By the influence of this theory, most of the skyscrapers built in the early twenties were of this type.<sup>17</sup>

The skyscraper in New York was largely brought about by its rapid development because the island is so narrow and its trade center so near one that the tendency of each trade is not only to flock to one spot but to crowd as near to the center as possible. The price of land on the island became extremely high. The same condition previals in every large city such as Chicago, Pittsburgh, Philadelphia, Detroit and Boston.

In order therefore, to secure an adequate return, an investment in such land, more floor space must be obtained. Since it is a commercial venture, an investment into the construction of an office building that does not seem a good financial risk is better left alone. Commercial considerations will inevitably dictate both its working size

<sup>17</sup> Granston, Jones "Architecture Today and Tomorrow" p. 2.

and rentable shape. The greatest increase, which was to have been expected, has taken place upon property which fronts on Broadway or that which lies within the bank district in the neighbourhood of Wali, Pine, Nassan streets and Park Row.

In New York City, the skyscraper has been the object of direct attack, through commission on heights of buildings because the city became too crowded, and lack of air, light and restrictive zoning ordinances. To combat this first zoning regulation to be adopted by the city was proposed in 1916. It required a calculated envelope or mass for every building. It resulted in a series of set-backs after the permissible height and then a tower, giving New York the appearance of the city of Towers. This set-back type of building had a structural and economic disadvantage, since the receding floors needed more and more columns on which to rest. The building stopped at the economical height limit. Empire State, (Figure 7) the tallest building in the world, is the most suitable example. The mammoth 102 storey building, designed by Lamb and Harmon was completed in 1931.

The fact that skyscrapers have cut off light and air, have caused pressure on the traffic capacity of street systems, and upset the equilibrium of property values has been due to the absence of sufficient space about them. The recital "devil of the price" however, has not been the height, but the excessive bulk of such buildings in relation to adjacent areas of open land. This has been the natural result of utilizing a system of streets and other open areas that has been laid out for the service of low buildings without adopting it to the new need. The skyscraper keeps its beauty as well as its utility as an individual structure by having sufficient space about it.



To correct the 1916 regulation for controlling the floor area of the building, a recent attempt was made to revise this situation. The F.S.I. (Floor Space Index) is the ratio of allowable floor area to the area of the lot. This varies from 1 to 15. Further more, the height of the building is limited by an angle of light obstruction which is a function of the width of the street.<sup>18</sup>

The practical objective is to obtain future buildings which will be lower than the great towers and surrounded by more space. Then buildings on frontages which face an open area, whose width is at least equal to the height of the building would then seem to be advantageous. Without this foreground it would be a confused mass, void of shape or visible architecture. Every building should have its form to obtain the light and shade.

Another significant feature related to the tall building with open space is the realization that larger property would permit the erection of a group of buildings, with some common services. This solution complicated the economic problem of the tall building but was successfully realized in the designing of Rockefeller Center, New York, by Wallace Kerkman Harrison in the 1930's, a sixteen building city within a city, and one of the most urban complex cities of the twentieth century.

In the city, an open space with a touch of green is a blessing, as the architect of Rockefeller center demonstrated in the 30's. The lesson stood without emulation until the early 50's, but more

18 Hoffmann, Andrew "City Square and Open Space" p. 78.

recently the value of ground space and plants received wider recognition so that today, one can point to several further examples and more are on the drafting boards.<sup>19</sup>

At present, the plaza idea seems to be restricted to projects for corporate clients willing to make a conspicuous gesture for the sake of prestige, amenity, and aura of success such a scheme lends their business headquarters.

In older cities there existed a hierarchy of buildings and the palace or church acquired its status by its prominent siting. Office buildings and other building types were restrained in design and did not dare to compete with the accepted symbols. This dareful hierarchy was bound into a whole by plazas, courts, arcades, and promenades.

Today there is no hierarchy of building type and Park Avenue of New York City represents elegant office towers, which competes for prominence through their height, shape, colouring and forecourts. The new office plazas are all exposed to the street, one side is completely open and they often depend on the adjoining buildings to provide the necessary enclosure. Without a comprehensive plan this is left to chance.

Nevertheless, the mere set-back of these high towers in the over-built city opens much needed "pool of calm."<sup>20</sup> Another aesthetic feature of these towers is that they are built of steel and glass. While technological advancement allows more elegance in the shape of the

<sup>19 &</sup>quot;Office Building," Architectural Record Book, p. 3.

<sup>20</sup> Rudolph, Paul "The Changing Face of New York "A.I.A. Journal, April, 1959.

building itself, the monotony such buildings can produce is quite dangerous to the street scrape. Being of glass they reflect each other, giving a feeling of greater spaciousness. Still, the new dimension produces confusion when the glass towers face each other.

This elegant plaza type building has also been demonstrated in every large city in the United States. The arrangement of office groups in Gateway Center, Pittsburgh and Penn Center, Philadelphia are brilliant urban design principles. Furthermore, individual office buildings, such as Civic Center, Inland Steel and Brunswick in Chicago and Consolidated Gas in Detroit are also some of the most outstanding.

Three of the most successful examples in New York are Lever House, the House of Seagram and the Chase Manhattan Bank Building, which were built between 1950 and 1960. These three projects consecutively feature more open space and higher towers which clearly shows the tendency of having taller buildings and bigger plazas nowadays.

Lever House, (Figure 8) designed by C. Bunshaft for Skidmore, Owings and Merrill, was built in 1950. It is the first successful postwar skyscraper on Park Avenue. With a tower containing only 24 stories of offices built with a very low coverage (F.S.I.6), it is a prestige building which serves as the headquarters for Lever Brothers. The owners preferred to leave most of the ground floor open, enclosing only the essentials in glass. The office slab is placed on one side leaving a small plaza open to the sky and bounded on three sides by a single storey block raised above street level. The resulting effect is very pleasing. Further more, the plaza is at the disposal of pedestrians, while the whole lower building, with its central opening, allows more light and air to the office slab than any of the earlier skyscrapers.<sup>21</sup>

The House of Seagram (Figure 9) also located on Park Avenue, is a thirty-eight storey bronze and glass tower designed by Miss Van der Rohe and Phillip Johnson and opened in 1957. It has a 90 foot setback from the street, creating a formal plaza from which the building rises slab-like. The plaza is raised above the street level in austere and formal way, two fountains are part of the axial progression toward the building, and an almost Renaisance spirit permeates the place. The relationship between the inside space of the foyer and the outside space of the plaza is by no means the easy ambiguous flow of the modern movement tradition. It is rather the collision of two, separated by a glass membrance. The significance of the Seagram building is found more in its architectural purity then in its setting. The plaza's main function is its prestige value. Economically it is considered a success, the tenants are happily paying the high rents because of their required status.<sup>22</sup>

The Chase Manhattan Bank Building (Figures 10,11) is an example of good urban site planning made possible through the co-operation of private and public interest. It was designed by Skidmore, Owing and Merrill and was completed in 1961. A sixty storey high office building, the central feature of the scheme is a raised plaza in a purely

- 21 Hoffmann, op. cit. p. 84.
- <sup>22</sup> Hoffmann, <u>op. cit</u>. p. 87.





Fig. 10 Chase Manhattan Bank Building - View

Fig. 11 Chase Manhattan Bank Building - Model rectangular building which does not conflict with the irregular street pattern or the sloping street grade. An extensive six-level development below the plaza accommodates bank facilities, building services and a vault at rock level. No public parking is provided, but three subway lines can be reached from the lower levels. An estimated 15,000 people are employed in the building, the cost which was over \$100,000,000. The elevation of the plaza separates it from traffic, creating a pleasant visual effect and removing the building and employees from the dirt and noise of traffic. A circular opening permits visitors a view of the branch bank below the plaza level, and its sunken garden in turn provides a pleasant view for its employees.<sup>23</sup>

In most big cities like New York and Chicago, skyscrapers are shooting up everywhere to balance the upsurge in land values caused by the restricted commercial premium. The practical objective is to have future buildings which will be lower than the great block towers, and be surrounded by more open space in order to obtain more light and shade desired. One of the pleasant examples is the Rockefeller Center demonstrated in the 30's.

Nowadays there is no hierarchy of building type, so the Park Avenue of New York City representing elegant office towers competes for prominence through its height, shape, colouring and forecourts, and is closely followed by other large cities in the United States. The new office plazas are all exposed to the street, and in most cases are

<sup>&</sup>lt;sup>23</sup> Meyerson, "The Face of Metropolis" p. 53.

raised above street level, thus separating it from dirt and noise of traffic.

#### The Growth of Shopping Development

The Middle Ages have left us many illustrations of beautifully conceived market places and of the building walls around them. These market places were not symmetrical but irregular in outline.

Ever since peddlers settled down to fixed locations and started to deal with sidewalk traffic, shopping environment has played a vital part in the design of shops and stores.

City market places were first organized for foot traffic only. Over the sidewalk were displays, advertising, store fronts and signs to draw the consumer. And finally, motor driven traffic came into the picture and destroyed ideal contact between merchant and consumer. The market place became more and more difficult to do business with because of an increase in traffic.

"Commercial enterprise produced only one form during the 19th century that did not answer its great criterion of convertibility and continued speculative increase. The form one notes without surprise, proved to be an abortive one, and ceased to be copied or improved. This was the glass covered shopping arcade; an attempt to find a new structure, utilizing the new achievement in iron frames and glass walls that modern technology offered. In the early part of the 19th century, specimens of this kind of arcade established themselves in every commercial city, from those in Naples and Genoa to Burlington Arcade (1819) in London(Figure 12). The shopping arcade in Brussels is one of the longest, while the most



Fig. 12 Burlington Arcade, London

magnificant is the great cruciform structure in Milan, a generous concourse with its shops, cafes and restaurants. These new structures had the special purpose of taking shopping off crowded streets, with its confusion of vehicles and noise.<sup>\*24</sup>

Though most of those shopping arcades are still prosperously in existence, they have not been widely united; or rather it is only with the creation of anti-urban shopping centers, built for the accommodation of motor traffic, that this conception has been brought back in modified form.

The shopping street, which developed through the old market stalls became a permanent structure, and is now the most popular form of shopping. It consists of a street bounded on one or both sides by shops which have show windows and entrance doors at the back edge of the pavement, e.g. in London, Crouch End, with storage space and goods access at the rear, facing a service way or road.<sup>25</sup>

The circulation of the public is both by foot, car or tramway. The former movement is in a straight line in front of the shop windows, with an occasional walk across the road to the display on the other side, where upon the show windows will again be followed in a lineal direction. This street car type of shopping center also exists in most of the large cities nowadays.

<sup>25</sup> Gibberd, Frederick, "Town Design" p. 100.

<sup>&</sup>lt;sup>24</sup> Mumford, <u>op. cit</u>. p. 439.
During the nineteenth century and the first half of the twentieth, the shopping districts lost all resemblance to older and quieter market places. Except within the special indoor environment provided by the giant department stores, shopping became a dangerous obstacle race. Downtown shopping conditions were essentially the same in towns, cities and suburbs from coast to coast. The street pattern inherited from horse and buggy days became overcrowded and unsafe. Private automobiles had no place to park, buses collected and left their passengers at random street corners, and trucks had only curbside unloading terminals. Noise, confusion and congestion made life irritating for both shopper and motorist. In spite of all this, downtown shop fronts are still designed for pedestrians because no one can park and shop from an automobile window.

Even the best shops and stores cannot win against the wrong shopping environment. During the last ten years, the danger point has been reached. In New York alone, eight major department stores closed. Merchants and architects have tried to regain traffic free outdoor space for shoppers and to provide off-street parking and trucking in one form or another.<sup>26</sup>

Because of industrial evolution, the flattening of population curves for cities has been known in the last half of the century. This happened because of commercial competition in the center of the city and changed conditions which encouraged greater decentralization.

<sup>&</sup>lt;sup>26</sup> Hornbeck, James S. "Store and Shopping Center" p. 12.

The increasing of motor vehicles and rail transportation have helped people to escape from the crowded city and find settlement beyond city limits. The suburban communities are rapidly rising everywhere.

As this new settlement grew at random, it produced a revolutionary shift in the pattern of retail locations brought out by the tremendous stretching out of the suburbs. The long row of existing small business along a main artery, characteristic of neighbourhood shopping only two decades ago, can no longer survive the traffic stream of customers. The big department store, the most popular respectable, enduring old lady of downtown has had to overcome its dignity and chase its customers out into the suburbs. Retail business had redeployed its forces in an ideally new pattern of shopping center.

The building itself of each shopping center occupies a spacious floor area, and further to multiply the costs of operating a modern grocery store, the housewife arrives in a car, and for every square foot of floor space within the building must be added four square feet of parking space. A cluster of small stores are attracting to itself under a large building group with urban scalle and offers an interest in architectural design in its market area. The location of the shopping center is mostly placed on a freeway-arterial where access are free and there is no other function to be served.

The food market thus becomes the anchor-piece in a shopping center. "On the other hand, there are 'shopping goods', articles of clothing, furniture or fashion which involve choice or facts or comparison and have to be 'shopped for' where evaluation and selection are involved, it is necessary to go where the range of choice is widest to the specialty shop and big department store at the center of the city".<sup>27</sup> This service is so successful that the community customers not only can enjoy the best quality of material and urban environment same as downtown, but also the convenience of transportation and parking space in which the downtown area has been neglected for a long time.

Individual stores and business houses in the downtown area would realize sconer or later that this struggle was not a one man affair but could and would be handled much more satisfactorily by the whole business center co-ordinating effort towards greater efficiency and more attractiveness. Most of the stores have recognized the advantages of suburban shopping, and reorganized as indoor shopping centers. Every sales department is designed as a separate shop, and carefully located in good relationship to its neighbours and to freely planned traffic aisles, so that the customers may enjoy all the benefits of comparative shopping just as they do along some outdoor main street. The shopping environment, light and climate, display and sales background, atmosphere and character is a tightly controlled indoor version of an outdoor shopping center.

Further more, the controlled indoor shopping environment has influenced the design of a prototype shopping center. The indoor shopping concourses are enlivened with pedestrian plazas, created with trees,

27 Carver, Humphrey "City in the Suburb" p. 81.

planting beds, pools, statues, garden courts and recreational areas. The traffic and parking problems of the downtown shopping environment were also solved. The first evolution occurred in the underground shopping concourses, with attractive open plazas below the skyscraper buildings of Rockefeller Center in the 1930's.

Pedestrian plazas set within building sites have partially enlarged the city's sidewalks, freed buildings from their neighbours and increased the amenities of downtown life. Today there is a great surge of urban redevelopment. In city after city such as Pittsburgh, Boston, Chicago, New York and Denver attempts are being made to redevelop and reestablish the central shopping district.

The following are examples for the redevelopment of downtown commercials areas in different cities:

Fort Worth (Texas) (Figure 13) has put the redemption of its central business district ahead of any other civic improvement. It has a compact city core of more than 300 acres bounded by a river and railroad lines. This core will be encircled with a belt highway around the business district. Below street level, truck deliveries will be made from the belt highway by means of a tunnel loop serwicing every city block. Most traffic will be organized, tamed and given proper terminals. The mile, in the heart of Fort Worth then becomes a pedestrian paradise. Each street will be a sidewalk. The business district on the whole will be a public park consisting of planning islands, covered walk ways, kiosks, little shops, frequent areas for rest and recreation, trees and fountains. For the weary laden, infirm or lazy, there will be small electric buses, similar to those used at world's fairs, to carry them from shop to shop, or from office to lunch, or to the theater. There are six large garages in the perimeter, and no garage is more than three or four minutes walk from the heart of the center.<sup>28</sup>

Charles Center, Baltimore, Maryland (Figure 14) covers a nine block area of 23.7 acres, located between the retail core of the city on the west, office and government center on the east. It is a \$127 million dollar project planned for a deteriorated core of downtown Baltimore in 1958, and the heart of the city replanned by Mier Van der Rohe. It is reused for the same purpose as before, offices, entertainment facilities, hotels, stores and a transportation terminal. At present, the traffic problem is serious and there are many bottlenecks. The new plan incorporates a ring road system with traffic arteries leading to and from it. The basic elements of the plan are, three public parks, separation of pedestrian and vehicle, and a concentrated, intricate and lively design full of changes. The site slopes six to eight feet from one end to the other making it possible to provide five levels of parking below ground.<sup>29</sup>

City market places were first organized for foot traffic only, but was disrupted by the advent of horse drawn vehicles, and finally, motor traffic which destroyed the ideal contact between merchant and customer. In the early part of the 19th century, the glass covered shopping arcade was introduced in Burlington, London in 1819,

- <sup>28</sup> Meyerson, op. cit. p. 74.
- <sup>29</sup> Meyerson, op. cit. p. 66.



Fig. 13 Fort Worth, Texas



Fig. 14 Charles Centre, Baltimore

for the special purpose of taking shopping off crowded streets. Another type of market place is the shopping street, developed through the old market stalls becoming permanent structures. The circulation of the public is both by foot and car. Nowadays it exists in most cities.

Transportation has played a great role in bringing seller and buyer together in today's crowded and expanding cities. But the shopping conditions of today are the results of traffic james and parking difficulties, caused by increased population. This led to the reorganization of some stores into indoor shopping centers, as was first demonstrated in the shopping concourse of Rockefeller Center in the 1930's.

After the rise of suburban shopping centers and the advantages it displayed, the downtown shopping situation was greatly influenced.

In recent years, city after city, such as Pittsburgh, Boston, Chicago, New York and Denver are attempting to redevelop and reestablish the central shopping district in order to cope with present day problems. Pedestrian plazas set within building sites have partially enlarged sidewalks, freed buildings from their neighbours and increased the amenities of downtown life. Present day shopping centers have larger convenient parking facilities, and tress and fountains are built to give a pleasant atmosphere.

## Primary Elements

The rapid growth of the central area has caused changes to be effected. The downtown stores have renovated their premises into

indoor shopping centers, in order to curb their loss of business to the suburbs because of better shopping facilities. The office skyscrapers have tended to become more prominent with its spacious plazas, fountains, instead of its former ugly image of steel towers without beauty.

The combination of these two aspects has led to the development of complex commercial projects which has increased facilities and convenience for workers and shoppers in the central area.

Four major considerations have resulted in the development of complex commercial projects which are as follows:

#### i. The Value of Land

The center city, besides being the place of great building height and density, is the place of greatest economic activity. In center city are the executive headquarters of commercial and industrial firms; the major banks and other financial institutions; legal and other professional services; the community's biggest department stores; special retailers, and the major daily newspapers. Government offices are concentrated there, so are well-known hotels and restaurants, theatres, public monuments, art galleries and night clubs. It is the place where land values are highest and congestion is greatest. Thousands of enterprises compete for locations, and thousands of people congregate for shopping, work and entertainment. It is the place that is most accessible to all portions of the metropolitan area because of easy transportation facilities. Centre city gives the metropolis an identity. It is the heart and image of the city.<sup>30</sup>

The American skyscraper is a result of economic forces and technological development in the center city. The large-scale projects made possible by corporate development are very significant features, as such they have developed a definite prestige value. Beside the height or the location of the building, the setting and the usage becomes more and more important. Since these corporations work strictly on an economic basis, the value of the setting is primarily a financial questions.<sup>31</sup>

Most of the fine office towers which were built in the postwar years were designed for corporate clients whose main source of income lie outside real-estate development as such.<sup>32</sup> Due to commercial considerations the property in the center of big cities dictates tall buildings. A ten storey building on Park Avenue and 50th Street would be a financial disaster.<sup>33</sup> The daylight factor which is no more than 30 feet in depth from the outside wall, has also helped to keep the tall and slender form of the postwar office building. By leaving a certain amount of site to landscaping, the building will be able to command higher rents, but this cannot necessarily be applied to all buildings or places. The loss of revenue by unoccupied space, its maintenance cost,

31 Hoffmann, op. cit. p. 88

<sup>&</sup>lt;sup>30</sup> Meyerson, op. cit. p. 38.

<sup>32</sup> Garlson, David B. "The Low Cost of Fine Building,"Arch. Forum, June, 1961.

<sup>33</sup> Hornbeck, James S. "A Review of New Skyscraper", Arch. Record, March, 1957.

can be considered as part of a long term investment only by very large companies. The prestige value is obvious, but a plaza is not an immediate financial asset.

One of the characteristics of center city is the constant pressure for investment. Many enterprises are born and many die in a continuing process of competition. When business activity is high, modernization of structures and replacement occupants take over almost automatically. When business activity is sluggish or is impeded by the frictions of central city, major issues of public policy arise. A program of urban renewal, improved transportation facilities, stimulation of private investment or the tacit acceptance of decline as natural and inevitable are the most important problem in the center city.

## ii. The Convenience of Human Activities and Multiple Usage of Land

The city is the focal point of commerce, culture, learning and communication. Recent surveys in the United States have shown that the majority of people prefer to shop in the center of the city. People will always flow to the center of the city for greater diversity of entertainment, shopping and business.

The existing zoning allows almost one hundred percent building coverage and depends on architectural "Wedding Cakes" for adequate light. On iron streets, they have no place to repose or to adjust themselves between activities. They crowd onto the sidewalks, chased by vehicular traffic and directed by stop-lights.<sup>34</sup>

<sup>&</sup>lt;sup>34</sup> Moriyama, Raymond "Urban Renewal Planning and Design," p. 96.

In 1952, at the International Congress for Modern Architecture, Paul Wiener of New York stated in a discussion on how new trends effect the city center; "The unprecedential growth of the Western people in the past two centuries has made it possible to support them. We also know that these people have tended to become uniform, sterotyped, group-minded and susceptible of mass manipulation and regimentation. There is an ever increasing trend toward effortless consumer satisfactions and passive spectator pastime and amusements."

In the beginning, I have to mention that the character of shopping in the central area are different from the neighbourhood center. First, the essential day to day goods, such as meat, fish, groceries, bread, newspapers, medicines, toilet requisites, stationery, tobacco and sweets have to be bought, and as most of them are perishable or are consumed quickly, they have to be purchased more frequently. Obviously they are the goods that constitute the main trade of the neighbourhood center. Second, there are goods which are for the most part necessities, but which are not purchased at frequent or regular intervals by any one household. Articles like furniture, suits, dresses, hosiery, radios and T.V.'s, clocks, bicycles and so on form a large part of the trade for the town center. The third group are luxury goods and goods which are bought suddenly on impulse, goods which the purchaser often had no intention of buying, mainly articles like jewellery, furs, expensive foods and flowers. They are vital to the town center, giving it distinctive qualities - shops selling flowers, antiques or jewellery are nearly

always interesting to look at, but few of these goods are sold in the neighbourhood center.<sup>35</sup>

The human element in the downtown is of prime importance. It determines the size of concentration and the standards of development. The adequacy of sunlight, air, pedestrian mall and open space must be ensured along with good separated vehicular movement. The two are incompatible in congested, already obsolete areas. The vehicular traffic in the downtown can be taken underground, to enter and emerge at the fringes of the busy commercial areas. At the fringe, public parking spaces are to be provided in multi-storey surface garages or underground lots. Every building which generates traffic will provide sufficient parking space to handle on their own land. The downtown must undergo a humanizing process, of freeing the pedestrian from vehicular traffic, free the ground for human use, for repose and for adjusting oneself between activities.

The employees can attend to their own business, such as banking, shopping etc. during lunch hour without great exertion. Therefore, the commercial functions which require central location, will cluster together and exploit the advantage of relative concentration.<sup>36</sup>

An outstanding characteristic of the new skyscraper is the open quality of the site. The new tradition in center city is allowing room for benches, fountains, strolling areas and greenery. Some buildings may be raised on stilts to extend the open area. The ground

<sup>&</sup>lt;sup>35</sup> Gibberd, <u>op. cit.</u> p. 97.

<sup>&</sup>lt;sup>36</sup> Moriyama, <u>op. cit.</u> p. 96 & 98.

floors may be devoted to public use such as exhibitions. The buildings are often strikingly visible, the exterior materials are arresting in colour, texture of design by day, by night, interior lighting draws the eye, offering the excitement of luminous forms and patterns. The developers have sought the prestige rather than routine investment. Amenities enhance the working environment, the buildings are invariably air-conditioned; they may have parking facilities, roof gardens, recreation for employees and offer a magnificant view of the surrounding city.

Further more, if the skyscraper office building is complicated with the shopping and/or other commercial functions such as theatre, restaurant and hotel or even apartment, then the bustle of people pass the enticements of window displays stimulates shopping. Great variety in style, quality and cost attracts purchaser to large downtown department stores and speciality shops, whether in search of high fashion or a basement bargain where the shopper can compare prices. There have been changes in the street and shopping atmosphere to make it more attractive, and when the shopper, tired from shopping then might enjoy the entertainment facilities or have something to eat or drink. Another advantage for more convenience for the office worker, is that they might enjoy shopping between lunch time or before going home.

Parking is made available on the periphery of shopping areas, or streets that are closed to vehicular traffic, enabling the pedestrian to walk from one store to the next along malls filled with flowers and trees, sculptures or other visual pleasures.

# iii. The Commercial Competition from Suburban Shopping Center

Since the Second World War, many people and businesses chose decentralized locations to escape the congestion, high costs, and obsolescence in center city. Department stores have followed young families to the suburbs, establishing branches in shopping centers with extensive parking. In addition to retail stores, many other business firms have moved to the suburbs to get more space and create a new image for the firm or to accommodate their workers. Many wholesale and industrial establishments have moved from the center city to areas of cheap land where large lots and easy truck access are available.

"Conversion of a street into a pedestrian mall is often advocated in the United States as a way to revitalize the downtown area. Conversions can be made at relatively capital cost; inasmuch as no buildings need be torn down. Streets are merely shifted, but town parking is considered a prerequisite for the bolstering retail trade anyway. However, these conversions are often ineffective and shortlived, because of pedestrian transportation impediments or obsolete buildings."<sup>37</sup>

"The parking of customers's cars is even more difficult to provide for than it is for the other shopping spaces, because a very large selling area draws a huge crowd and is concentrated on a comparatively small area of land. In America with its very high percentage of owner drivers, this has become a major problem, for it is estimated that two square feet of parking space is required for every

37 Meyerson, op. cit. p. 90.

square foot of floor area. Whenever land can be obtained, as in the big suburban center, the store is surrounded by vast areas of motor cars and all kinds of ingenious solutions are devised to increase parking areas. When almost all shopping is located on major highways, the store abandons all attempts at providing shop windows, and concentrates on making it as easy as possible for the motorist to drive up to the store entrance."<sup>38</sup> In addition, to the parking and convenience, an open space with pleasant landscape in the front, also gives the customer an open air and fresh shopping environment.

In view of the aggressive competition offered by the newly developing suburban shopping centers, merchants in downtown will have to secure some of the attractive features of the outlying centers if they are to hold and develop their patronage.

## iv. Transportation and Parking

The problem of access to center city is certainly the one most widely recognized and complained of. Yet the traffic problem may be insoluble, if more highways and off-street parking spaces are provided, more persons may chose to drive downtown, thus maintaining congestion at its previous level.

Moreover, highways and parking facilities are heavy consumers of land, if enough of them were provided to satisfy the potential demands of auto drivers to go to downtown. Without mass transportation, stores and offices would be tiny islands in a concrete sea. The traffic problem of center city is not merely one of access from outside, but comfort and convenience within the downtown area, and segregating the pedestrian from the motor vehicle movement within the center city. Segregating the pedestrian from the motor vehicle can do more than reduce accidents and speed deliveries. Trade is often improved where pedestrian ways give people a chance to stroll or sit in an attractive setting. A small scale transit system may become important if pedestrian ways and plazas develop the moving side walk and the electric shuttle bus may connect the pedestrian area to parking lots or transit facilities, or operate within, certain kinds of pedestrian ways, where distances are great.<sup>39</sup>

However, it is not transportation but the complex commercial buildings which symbolizes the center city. While many people work in other settings, selling, serving meals, loading trucks, driving buses, cleaning streets, road paving, welding girders, manufacturing garments, it is mainly the white collar worker, the man with a desk, telephone, filing cabinet and a briefcase, who still finds his job opportunities downtown.

For the definition of creating complex commercial projects, in the past decade or so, there has been an increasing realization in the major cities of America and even all over the world of an urgent need to develop the center city, of revitalizing it with new complex superstructured projects. Depending on the size and need of the city, there

may be one or more complex commercial projects in a city linked by malls and/or transit cars.

Complex commercial projects should be easily accessible from outside and also within its own area. There should be a parking area comparative to its size, hence providing motorists with adequate parking in already a congested city, and there should be a bus and/or subway terminal for the commuters and customers who work or shop in the complex.

In order to create a pleasant and soothing atmosphere a plaza or sunken garden with its fountains and plants would enhance the prestige and appearance of the complex for the developers and its patrons.

The lower building area should be reserved for banks, theatres, restaurants and stores, and the skyscraper building for either offices, apartments or hotel premises. The below ground level could be used for parking, subway or railway station.

The center city will become successful because of the development of commercial complex projects. People should be able to move in freedom within it and enjoy themselves. When the occasion arises for people to celebrate, they will always congregate in the central area of the city. Whenever there is an opportunity and a center of interest, people will be drawn to these areas.

#### Contemporary Conclusion

The value of land has increased considerably in recent times due to economic and technological developments. This has led to the

problem of center city properties being unsound financially if they build only a few stories high. Hence began the emergence of the skyscrapers to make the projects feasible. The center city, beside being the place of greatest building height and density, is the place of greatest economic activity. A program of urban renewal, improved transportation facilities, stimulation of private investment or the tacit acceptance of decline as natural and inevitable are most important in order to keep the image and prestige of a progressive center city.

It is important to consider human activities in connection with such a center city. For its here where people will cluster for work, enjoyment, dining and shopping. Therefore, it is necessary to separate pedestrian from vehicular movement, because these two are not compatible. Sufficient parking must be provided and vehicular traffic taken underground and connected with highways at the perimeter of the downtown area.

The new trend in center city is to provide some complicated commercial structures; plazas with plants, benches, fountains, and malls with stores displaying quality merchandise for the shoppers. The main building is for office, apartment or hotel.

Due to the congestion and high costs, and obsolescence in center city, many people and businesses have moved to the suburbs where more land at reduced prices is available. In the suburb, they can create an image for their company, and shopping centers have sprung up in most of the major areas, thus giving downtown stores competition.

In a city center there may be several independent complex commercial projects within which may be related to form the core. They also serve the metropolitan area besides the central downtown area. In the metropolitan area there may be several sub-centers besides the city center, which serves basically its own community. These subcenters may also have several independent complex projects which may or may not be related to each other.

The development of these complex commercial projects have renovated city blocks showing signs of decay and stagnancy, which has helped to revitalize whole city areas.

In order to cope with this situation, planners are redeveloping downtown areas, thus revitalizing it, and thus drawing more shoppers and business.

## PART II EXAMPLES OF COMPLEX COMMERCIAL PROJECTS IN AMERICAN CITIES

Now, more than ever, Americans have the economic opportunity to give their city the quality of beauty. They are investing most of their capital in the center city and are committed to its way of life. The bulk of commerce and industry is located in the metropolitan areas. Most American families live in urban areas, their daily lives are bound in an intricate web of urban activities.

There is no need for them to limit themselves to daily urban problems, such as housing, recreation and transportation in the waning downtown. They can provide more than therapy for these urban irritations. They can raise their expectations. They can create an urban environment that is stimulating instead of confusing, playful instead of solid.

American cities have a modest but distinguished urban design, and a large scale urban renewal program in every large central area of a city. The complicated urban commercial structures have been applied in most programes in large cities. Tangible evidence of these heritages are rare in twentieth century cities. Nevertheless, examples persist even after years of unprecedented urban growth and change, and gives evidence of a tradition which may still inspire them. Each successive wave of newcomers brought to America, distinctive colour and form that influenced the areas where they settled.<sup>40</sup>

In America, there is widespread interest, practical as well as theoretical, in the redevelopment of downtown with complex commercial

Meyerson, op. cit. p. 11.

40

projects. The following examples are worthy of attention.

# Rockefeller Center, New York City (Figures 15,16,17)

New York's Rockefeller Center, with its sunken plaza and terraced garden which was completed in 1930 has become a symbol to the world. No other site in New York or in the nation has so many locational advantages for a large commercial development. Rockefeller Center would be inconceivable on most other sites, and it provided a historical precedent for post-war landscaped complex commercial structures in the United States.

The financial considerations were the major factors which shaped this great building complex, consisting of sixteen buildings in varying size and design, set on a fourteen acre site between 48th and 51st streets and 5th and 6th avenues. Its construction has continued to the present, the latest addition being the new Time Life Building just across 6th Avenue which opened in 1959. Some parking has been provided under part of this site.

The success of the Rockefeller Center's ground is a result of underground circulation, tied to the subway line, and the shops have moved inside the building. The Center's great contribution to the urban landscape was a pedestrian mall. This small central promenade, barely 150 feet long, at once achieved an importance not dreamed by the promoters. Officially known as the channel gardens, it is a short passage leading to the lower plaza, a sunken ice-skating rink in winter and a restaurant in summer. The space beyond this is Rockefeller Plaza, which is really a cross street. Huge crowds gather and at all hours







Fig. 16 Rockefeller Centre, New York City - View



Fig. 17 Rockefeller Centre, New York City - Plaza

are drawn to the spectacle of the landscaping, the fountains, the statues and the activities below. The plaza is so successful because:

- "l. The pedestrian is protected from vehicular traffic physically and visually since his circulation level is below street level.
- The fountain makes it come to life and in the summer creates a sense of coolness. The sound of water is acoustical perfume.
- The ice skating rink and the restaurants generate concentrated activity and thus vitality.
- 4. The stores along the channel gardens contribute to the liveliness of the pedestrian area.
- 5. The skilful and always fresh-landscaping adds to the attractiveness.<sup>n41</sup>

"In the postwar period, architects were quick to evaluate the true value of the experiments worked out in the Rockefeller Center. They realized that open space and landscaping can play an important part in commercial design. A few were able to convince their clients that it was desirable from an aesthetic point of view and practical from a financial one."<sup> $\mu$ 2</sup>

- 41 Meyerson, <u>op. cit</u>. p. 48.
- 42 Hoffmann, op. cit. p. 74.

Penn Center and Market East Project, Philadelphia, Pennsylvania (Figure 18)

Philadelphia is proceeding on a more modest scale, but over a much broader area. During the post-war years, under the leadership of a reform government, Philadelphia has almost built a new city with programs ranging from highway improvements to residential conservation, redevelopment and rehabilitation.

From 1950 to 1960, nearly two million square feet of department store space was opened in suburban branches, and since then, several new major centers, including the attractive Cherry Hills Center with its enclosed shopping mall, have been opened, adding at least another one million square feet.

The downtown department stores felt compelled to follow their customers to where they live, but at the same time they are weakening the position of their downtown headquarters. In such situations, the solution has been not only to contract the amount of retail space, but to bring the shops together, and to give them the flair and flavour of the suburban shopping center.

The dilemma of downtown as a shopping core is shown more clearly in Philadelphia than in any other major city. Penn Center, in the heart of Philadelphia, unites transportation terminal facilities for commutter trains, buses, city transit and automobile parking, with offices, retail buildings and a pedestrian mall. The construction of Penn Center symbolized the emergence of the new Philadelphia more than any other improvement.<sup>43</sup>

<sup>43</sup> Bacon, Edmund A.I.A. "Downtown Philadelphia" Architectural Record, May, 1961. p. 130.



Fig. 18 Penn Centre, Market East and Independence Mall, Philadelphia

The development replaced the old Board Street Station of the Pennsylvania Railroad and its ugly accessory "the Chinese Wall", the city center covered over ten acres. It was first suggested in "A better Philadelphia", an exhibition opened in 1947. More than 385,000 Philadelphians visited the exhibition and were introduced to the specific plan for improving the city.

Edmund Bacon, director of City Planning for Penn Center, called for the creation of a pedestrian concourse of 1,400 feet long by 150 feet wide, not roofed, sunk below street level and flanked by two levels of shops. Five buildings were on the site, while 3 streets crossed the concourse. Pedestrians were encouraged to linger and enjoy the variety of the center. The original plan proposed by City Hall was rejected.<sup>44</sup>

After market research analysis, the eventual scheme was a package deal designed by Robert Dowling. There were to be four 22 storey office blocks situated in the central mall of the plaza and terminaled by a transportation building.

The Pennsylvania Railway was persuaded to give up 50 percent of its ground coverage to pedestrian malls, and various sunken plazas opened up the underground system which connected the transportation building and city hall. The lower pedestrian concourse allowed for 150 shops and parking facilities underground for 2,000 cars.<sup>45</sup>

44 Meyerson, op. cit. p. 62

<sup>&</sup>lt;sup>45</sup> "1952-62, Center City, Penn Center, Philadelphia" Architectural Design, August, 1962, p. 389.

The pedestrian concourse is almost totally submerged. At some points there are connections between esplanade and the lower concourses which are open in summer and closed in winter. There is an outdoor restaurant which is replaced between October and May by an iceskating rink. The esplanade has been landscaped. The lower concourse, however, has been landscaped subordinated to the shops.<sup>46</sup>

The first buildings were built for the Uris Brothers who hardly believed the course dream would come true and so declined at first to consider worth while the extra cost of full connection to it. The most recent, the Transportation Building at right ties those together and gives them reality.

Early in 1950, Vincent S. King was later to design the Transportation Building, and was invited to serve as consulting architect for Penn Center Development by the Philadelphia City Planning Commission.

The overall effect of the pedestrian is unified through the design control of one architect, who was able to design the courtyards, tree wells, stairway, pool and physical structure for the entire underground system, but also all the commercial section throughout the Transportation Building.

The Transportation Building is a major focus of the scheme. Behind the 18 storey office building site, there is a 1,000 car parking garage and a bus terminal. Here buses not only load and unload passengers, but they can also be fueled, repainted, washed and serviced

<sup>46</sup> Meyerson, op. cit. p. 63.

in the underground maintenance section. The tower deliberately straddles the axis of the center to permit vision throughout, and create an airiness exactly opposite to the character of the "Chinese Wall" which the center replaces.<sup>47</sup>

From Penn Center, the underground pedestrian mall beneath the site area of city hall connects with the underground parking garage adjacent to the crosstown expressway and east to the main shopping area. It lies between and connects the underground commuter railway load and the rebuilt Market Street subway stations.

The subway stations will open into courts and gardens created in the lower level superblock, where the shopping promenade is located, and elevated sidewalks connect directly with second floors of the five great department stores. Adjacent to the shopping promenade is the local and long half bus terminal, above which is a parking garage, both served by ramps which connect directly with the regional expressway.<sup>48</sup>

The Market East is a transportation mechanism tying all the modes together, and provides a decent entrance to center city for those who use them.

Furthermore, the completing element of the center city concourse plan is Market East situated between the now finished Penn Center to the west and Independence Mall to the east.

<sup>47 &</sup>quot;Transportation Building and Concourse" Architectural Record, May, 1957 p. 195.

<sup>48</sup> Bacon, Edmund A.I.A. "Downtown Philadelphia" Architectural Record, May, 1961 p. 140.

The plan of Penn Center was mostly completed in 1962. It is a reminder that, however brilliant the urban design principles, the execution and detail are also important. The finest concept is there. The circulation is excellent.

# Mile High Center and Courthouse Square, Denver, Colorado (Figures 19,20,21)

Denver is an administrative center with thirty Federal agencies. It is called second Washington, with a financial and a distribution center for an area rich in mineral resources. The two projects are an attempt to capitalize on the growth of the city and to revitalize the central area.

The two sites are only one block apart and might be considered as a single scheme, although attention here is focused on the first. The two developments were designed by I.M. Pei, especially Mile High are prestige projects, built to attract prestige business tenants and have a maximum beneficial effect on surrounding properties.

"Mile High Center covers two acres and has 475,000 square feet of office space, 118,000 square feet of renovated bank building and 49,000 square feet of shopping area. Approximately one quarter of the site is open plaza or walkways with direct access from the surrounding streets. No parking facilities have been provided nor were they specified by the city planner of Denver."<sup>49</sup>

The main office building rises free and four-sided for its full 23 stories, in its own pleasant setting of fountain and plaza. Since

<sup>49</sup> Meyerson, op. cit. p. 42.

the building is free standing and covers less than 25 percent of its lot, offices can have almost equal light and air on four sides from ground to top floor. An economically squarish plan 127' x 152' reduced construction and maintenance of the outside wall area. On the lower floors, 17,630 square feet or 91 percent of 19,304 square feet is rentable where one bank of elevators drop out on upper floors, net space increases to 18,050 square feet or a high 93 percent.

All class glass in Mile High Center is fixed for year round air conditioning. The finishes, colour and proportioning of shape and elements of the building are sophisticated. Dark grey anodized aluminum, honey coloured porcelain and enameled steel are used. It is luxurious by Denver standards.

Around its base the owners, Zeckendorf, Webb and Knapp and the Fuller Company each hold 42.5 percent, and other interests 15 percent, have given up stores, protecting their office tenants from pasted window disorder of average shopfronts. Instead they have placed shops and restaurants in the basement concourse of their low adjoining building, where they still thrive. Office tenants gain prestige and pedestrians gain the leisurely space of open arcades at street level.

The developer calculated that 60 percent occupancy would cover operating expenses, taxes and amortization, largely because the building was completed nearly \$11 million under the budget. Construction cost, including air conditioning were \$7.8 million; \$17.00 per gross square feet or \$1.32 per gross cubic feet.<sup>50</sup>

<sup>&</sup>lt;sup>50</sup> Pei, I.M. "Denver's Mile High Center" Architectural Forum, November, 1955 p. 138-140.



Fig. 19 Mile High Centre, Denver - Plan



Fig. 20 Mile High Centre, Denver - View

Fig. 21 Mile High Centre, Denver - Plaza The entire development includes the remodeled bank and transportation building whose rentable ground floor is enhanced in value by the open plaza and concourse under the office tower. The rents of the office building run from \$6.00 to \$6.50 a square foot, 50 percent higher than Denver average. Six month after the building was completed, its 369,540 square feet are 58 percent occupied, largely by big companies setting up new and expanded headquarters in the Rocky Mountain Empire.

The offices are prominent, other uses have been subordinated by them. The shopping concourse has also thrived at basement level, doubly nourished by persons attracted to the ground floor plaza and the working daytime population.

The street of the site has been opened to the pedestrian and made highly attractive. The entrances to the office blocks are set back from the outer columns which support the main frame. This liberates a large portion of the site for a covered walking area, a continuous space that flows freely around the building.

The main feature of the plaza, and the focal point for the whole complex is a fountain and pool which draws the visitor off the street giving him a welcome moment of freshness in the dry heat, and particularly attractive when seen from the windows of the restaurant or from above.

The rectangular block of the office building has been set against the curved roof and the more plastic form of the transportation building. Such a position of shapes can create variety on the urban

scene and can also be used to contrast the new building with the old.

The Courthouse Square, one block away, covers 5.3 acres. The Mile High Center terminated the major financial street of the city, and the Courthouse square is the major retail street.

Courthouse Square contains a 1,000 bedroom hotel, twentyone stories high with convention facilities, a department store and shops covering 450,000 square feet and a three level underground garage provides for 2,000 cars. The daytime need of the department store and the nighttime needs of the hotel compliment each other so that parking facilities can serve both.

The scheme also contains a television studio, ice skating rink and a garden plaza dropped below street level, reminisent of the central feature of Rockefeller Center.

"The design qualities of the Courthouse Square are similar to those of Mile High Center. There are the juxtaposition of varying building shape, and a central plaza with a focus of movements - this time skaters, not water."

"The architects wished to link the two developments with a pedestrian esplanade along a connecting street, this would require closing the street to traffic. Though the street was closed for nine months during construction with no apparent ill effect on traffic, the city refused to permit creation of the esplanade."<sup>51</sup>

51 Meyerson, op. cit. p. 46.

The development of Mile High Center is designed to create anatmosphere of prestige. The chain lines, attractive material, colour and the provision of extra building service combined, created a contrast between the old and new Denver.

Just one block away, two centers, Mile High and Courthouse Square are related to each other. They contribute a sense of vitality to a large section of the Denver central area, yet they fit into the existing street pattern.

Mile High Center was completed in 1955 and the Courthouse in 1959. "The two schemes are a kind of spot rebuilding which can serve as a magnet to attract new activity. In time, they may form the two sides or terminal features of a large city mall or square."<sup>52</sup>

Midtown Plaza, Rochester, New York (Figure 22)

Midtown Plaza, in central Rochester, has undertaken more than mere conversion of streets. This downtown urban renewal project produced by all this joint planning, is a 1.3 million square feet complex of office, hotel and retail space; some new, some remodeled, are linked together on a 7.5 acre site by an enclosed air-conditioned shopping mall. There are two existing department stores and a hotel. The designer, Victor Gruen Associates have also designed a new 18 storey office-hotel building, telephone building, bus terminal, 50 stores and a 2,000 car underground garage.

<sup>52</sup> Meyerson, op. cit. p. 46.
Midtown Plaza looked like many another city's aging commercial district. To shop downtown meant searching endlessly for surface parking lots. The business of the two department stores were falling off because of the lack of downtown parking. The situation might have seemed hopeless elsewhere, but Rochester's city manager's work is exceptional in more ways than one; it has already put the city's finances on a firm footing, created a downtown traffic loop, and started building parking ramps around the commercial and business district.

"In 1956, encouraged by the city's new prospects, two department store presidents (Gilbert McCurdy of McCurdy's Department Store and Maurice Forman of B. Forman Company), got together and decided it was time for private initiative to revitalize downtown Rochester. They quickly realized that remodeling their neighbouring stores was not enough." They then called in architect Victor Gruen for a long term evaluation of the whole south-eastern core of the city.<sup>53</sup>

The cost of the first phase was \$15 million, the ultimate cost \$25 million. A project such as Midtown Plaza would be economically advantageous, in terms of new tax revenues and increasing real estate values in the area. It is a project of private developers in co-operation with the city government. There is no state or Federal subsidy, but the private developers, who are investing an estimated \$15,000,000 would not have been willing to risk so much capital if the city had not been ready to make sizeable improvements in the area.

<sup>&</sup>lt;sup>53</sup> Gruen, Victor "Center for Rochester" Architectural Forum, June 1962 p. 108.



Before and after redevelopment project

Fig. 22 Midtown Plaza, Rochester

67.

Rochester closed a grade separated loop road around the downtown area and the municipal government built a 2,000 car, three level garage beneath the project by extending Broad Street into a new access, by closing off one street and by partially closing another. The underground, linking the inner loop will cost approximately \$12,000,000.

Further more, the city has also undertaken an ambitious program for construction of a new civic center and various slum clearance and renewal projects surrounding the downtown area. It has decided to construct a downtown terminal to serve regional and local bus lines. In addition to \$15,000,000 from private investors and the city's \$12,000,000, various tenants are making substantial investments and department stores are being enlarged. This Midtown Plaza will have a total investment of over \$30,000,000.

Midtown Plaza uses several existing downtown enterprises as focal points in the new development. The structures to be retained and remodeled include the McCurdy Department Store, which will be enlarged by about one third, the Forman Department Store and the 500 room Manger Hotel, the largest hotel in Rochester on the northern end of the mall.<sup>54</sup>

The new structures include an eighteen storey office and hotel building. Midtown Plaza Tower, Rochester's tallest building and the first skyscraper in 30 years, form a second anchor to the south. The first fourteen floors of the tower holds 259,000 square feet of

<sup>&</sup>lt;sup>54</sup> Meyerson, op. cit. p. 91-92.

office space. The top floors are occupied by the 78 room Midtown Tower Hotel, a restaurant and bar, and immediately below, the public rooms. The office floors below are faced with brick, the hotel floors above are sheathed in gold anodized aluminum.

The telephone company has a six storey office building plus approximately 200,000 square feet of a two storey building. These low structures contain, among other facilities, shops, an auditorium on the upper mall level, with stage and sound system and a seating capacity for 300 people, a children's play and amusement area and a bank.

The buildings border the 295 foot mall, which unites the total scheme. The mall has an enclosed skylight and air conditioning is year round. Kiosks, exhibit space, landscaping and fountains create a very pleasant shopping environment, and may also create a new social meeting place, besides the main function of a glorified market place. The fifth new stores on the mall have been carefully screened to attract a more sophisticated audience than most suburban shopping centers. There are, for example, more high quality clothing stores and no five and tens.

In addition to the two level landscaped mall, where one can meet, have lunch, and take care of a multitude of errands usually reserved for hectic weekends, office workers have access to the plaza's new post office, the bus terminal with both intra-city and suburban connections. For those who still want to drive downtown, the city-owned and operated garage can handle 12,000 cars a day and 1,200 cars in 30 minutes at peak rate.<sup>55</sup>

<sup>55</sup> Gruen, Victor "Center for Rochester" Architectural Forum, June 1962, p. 111.

Now retailing activities take up more than half of the whole complex. Thus, the owners intend to capitalize fully on their central location and attract office workers to new retailing facilities.

The first phase of the garage was completed in 1961, the shopping mall, telephone building and the town were finished in 1962.<sup>56</sup>

Midtown Plaza does have at least one feature in common with the suburban regional shopping center. The covered pedestrian mall is its main artery. It is a creation of a town square with urban qualities. At the same time, the plaza is important as a setting for cultural and social events - concerts, fashion shows, balls and those activities which one connects with urban life.<sup>57</sup>

Marina City, Chicago, Illinois (Figures 23,24,25)

The 3.1 acre site for Marina City, which lies on the north bank of the Chicago River and State Street Bridge, was formerly railroad property facing downtown like several other center city projects.

Marina City is a complex of office, theatre, apartment and parking towers, designed by the Architects of Bertrand Goldberg Associates. In addition, at the cost of \$36,000,000, the center includes a marina for 700 small craft, a restaurant, skating rink, health club with swimming pool, bowling alleys, shops, a semi-public park and a

<sup>&</sup>lt;sup>56</sup> "The Planning of Midtown Plaza" Architectural Record, October, 1961 p. 138.

<sup>57</sup> Gruen, Victor "Center for Rochester" Architectural Forum, June 1962, p. 112.

sculptured garden on its 3.1 acre site. Completion was scheduled in 1962, and financing was assured by the FHA under title VII of the National Housing Act.

Marina City has been sponsored by the Building Service Employees International Union, the first union to put the equity capital for a semi-luxury project for the general public to try to help retain middle income families in the city. According to its president, the union built in the center city because a great majority of its members are employed downtown. In the circumstance of downtown Chicago, housing vacancies have been quickly absorbed in recent years.

In 1959, a report of a survey by the Chicago Central Area Committee stated that there would be a demand for 39,000 dwelling units in the central area for the next twenty years. The report predicted that this would increase to 47,000 if the major proposals of "Develop Plan for the Central Area" are carried through.

One of every four married couples and two person families, who work in the central area said they wish to live there, so did many single persons, and that comprises most of the demand for the downtown housing.<sup>58</sup>

In explaining the design concept, architect Bertrand Goldberg said; "we cannot burden business building used 35 hours a week and with our total maximum load. We can no longer subsidize the single shift use of our expensive city utilities. In our cities within cities

58 Meyerson, op. cit. p. 105.



Fig. 23 Marina City, Chicago - Plan

Fig. 24 Marina City, Chicago - Model



Fig. 25 Marina City, Chicago - Model we shall turn our streets up into the air, and stack the daytime and nighttime use of our land. We shall plan for two shifts within cities where the fixed costs of operating a city can be shared by commerce, recreation and education at the lower levels of the city and by housing above. As we spread taxes and other expenses over wide use, we help the traffic problem caused by the trip to work. Our specialists living and working in the same building complex need only vertical transportation.<sup>#59</sup>

The apartments are in two circular concrete tower blocks, each sixty stories high, containing 896 apartments in the upper forty floors and a ramp storage space for 900 autombolies in the lower nineteen floors in roughtly a third of each tower. It will be the tallest apartment building in the world. The living units form out from 35 feet economical core of utilities, mechanical equipment and other services in the center of each tower. The design also saves hall and circulation. Each unit is heated and has a private balcony.<sup>60</sup> The following 256 efficiency units rent at \$135 per month; 576 one bedroom units at \$180; and 64 two bedroom units at \$295 have been arranged in the two towns.

Since the garage will also serve the commercial uses of the building group, the 900 parking space can not be provided for each

<sup>&</sup>lt;sup>59</sup> "Architect Goldberg's Marina City" Architectural Record, September 1963, p. 215-216.

<sup>60</sup> "Chicago's New City within a City" Architectural Record, October 1960, p. 205.

apartment. The vertical parking of cars is one answer to a common problem, and attendants will park the cars.

There are 180,000 square feet of office in a ten storey building as well as housing offices, shops and restaurants, located on a landscaped plaza. The recreation facilities, a promenade desk which covers the entire site as a two storey service building, containing a service lobby, a 700 boat marina, swimming pool, skating rink, health club with swimming pool, bowling alleys with fifty four lanes and areas for receiving all traffic. A 1,700 seat theatre resting "piggy back" on top of an 750 seat auditorium. The theatre is designed for all kinds of performances, movies, musical concepts, shows, revues etc., with its roof of sprayed curving concrete frame, set on an angle to the plaza. The whole project was completed in 1962.

"The strong building shapes will contrast with a podium. The inclusion of landscaped plaza is admirable, although the shape of the plaza makes it appear to be leftover space rather than an element in its own right. Unfortunately, the increase of pedestrian and traffic vehicles included by the buildings will overload the city circulation system at a point where there is a major bridge entry to downtown. The architects did try to mitigate traffic congestion by a forty-foot private street."

"Marina City, intensely urban in its location, in its high density, and in the variety of uses it combines on one site, is the largest of the new projects that combines apartment houses for upper income people with commercial enterprises; as was frequent in the old

day of the apartment hotel before the depression of the thirties."<sup>61</sup>

World Trade Center, New York City (Figures 26,27)

"The World's tallest building," a title held since 1931 by the Empire State Building will be taken over by not one but two 1,350 feet high towers scheduled to form the main elements in the new redesigned \$350 million, 110 storey World Trade Center. It is proposed for Manhattan's lower west side on a 16 acre site, and will provide 12 million square feet of rentable space. The complex will qualify as being the largest, having more floor space than the Pentagon by about 3.5 million square feet.

The World Trade Center was designed by Minoru Yamasaki and Associates, in association with Emery Roth and Son. The designing, planning and construction of this project will be carried out by the staff of the Port of New York Authority. At the announcement of the project and the unveiling of the model, Yamasaki said that he considers the center a physical evocation of the "relationship between world trade and world peace" and a "living symbol of mass dedication to world peace."

"In addition to the two towers, the 16 acre site will be developed with lower buildings containing shops, stores, restaurants and exhibition halls. According to Yamasaki, will also furnish a point

<sup>61</sup> Meyerson, op. cit. p. 106

<sup>62</sup> "World's Largest Building Proposed for Manhattan," Progressive Architecture, February, 1964 p. 59



Fig.26 World Trade Centre, New York City - Plan



Fig. 27 World Trade Centre, New York City - Model

of reference to permit the spectator or pedestrian to relate in human scale to the whole complex. The low and high buildings will surround a wide public plaza which, as Ada Louise Huxtable wrote in the New York Times, Could be a modern Piazza San Marco - with skyscraper."<sup>63</sup>

The Port of New York Authority, which will build and operate the center, estimates that it will have a working population of 50,000 with perhaps as many as 100,000 more a day passing through the area, using the subway stations and a new Manhattan terminus for the old Hudson tubes. Pedestrian and vehicular traffic is carefully sorted underground as well as in the five storey buildings around the plaza.

As well as serving its primary aim of providing new headquarters for all New York Port activities, a massive, but clearcut program was presented;"(1) 12 million gross square feet of floor area, (2) a 16 acre site into which the project had to be fitted, including new facilities for Hudson Tubes and subway connection, (3) a budget of something under \$500 million."<sup>64</sup>

A 208 foot wide facade of square towers give a strikingly elegant effect. In the upper floors, there are as much as 40,000 square feet of net rentable space per floor. At the ground level, sheltered archways will form galleries around all four sides of the plaza. In an attempt to solve the problem of increased core space in high rise

<sup>63 &</sup>quot;World's Largest Building Proposed for Manhattan", Progressive Architecture, February 1964, p. 57 & 59.

<sup>&</sup>lt;sup>64</sup> "World's Biggest Skyscrapers have New York up in the Air" Architectural Forum, March 1964, p. 119.

structures, the architects adopted the "sky lobby" system, a system similar to horizontal mass transit.

The elevatoring system is equally unique. The center will have 230 automatic elevators. The key is a combination of express and local elevator banks, the former made up of very large 55 passenger cars travelling 1,700 feet per minute. The towers are divided into three zones; 11 in each tower going to the 41st floor, a dozen going straight to the 74th floor. These floors are the sky lobby as mentioned previously. Seventy two local elevators in each of the 140 storey high tower will service traffic in the lower, middle, and top areas.

Despite the mammoth proportions of the World Trade Center, Yamasaki has preserved more than five acres of open space, mostly in the huge plaza, which is protected from the river wind by the lower five storey buildings which are 70 feet tall and are wrapped around the base of the towers. All vehicular traffic is shunted underground, and Port Authority officials hope eventually to have access from West Side Highway directly into the basement loading docks and parking garages, of which a 1,600 car capacity is planned. The lower building will include special spaces for United States Customs, retails shops, exhibit pavilions and a 250 room hotel. The overall cost of the whole project is estimated at \$25 per square feet, the towers alone will cost more.

The project is expected to begin early in 1965. The first stage of construction is scheduled for 1968, and the balance will be completed during 1969 and 1970.

"As the World Trade Center project proceeds, a great deal more will be said and written about it, on every subject acrophobia to

to urban design. But it already appears that the technical and economic obstacles to super skyscrapers have been overcome."<sup>65</sup>

<sup>65 &</sup>quot;World's Biggest Skyscrapers have New York up in the Air", Architectural Forum, March 1964, p. 120.

#### PART III EXAMPLES OF COMPLEX COMMERCIAL PROJECTS IN MONTREAL

In the past two decades, since the end of the last war, Montreal has witnessed constant expansion due to the sustained growth of the Canadian economy. The growth of Montreal was due to the rise in population, increase in vehicular and shipping traffic, and the expansion of industries and services.

The economic prosperity of the postwar year affected the central areas of the city. The old quarters could not contain all the financial institutions needed by the metropolis and a new business and commercial center has emerged. For this reason, the new type of office building must offer more facilities, and prestige value. This has led to the construction of several Complex Commercial Projects in downtown and Metropolitan Montreal.

#### Evolution of Office Building

### i. Sun Life Building (Figure 28)

The Head Office of the Sun Life Assurance Co. of Canada was completed in 1928. Though now not the highest building in Montreal, it was the largest building in the British Empire during that time.

The location of the Sun Life is bordered on the south by Dorchester, on the west by Mansfield and on the east by Metcalfe Street facing Dominion Square, with a two acre site open on three corners.

The 24 storey office building is almost four hundred feet in height, formed in set back type with full occupancy in ground floor level



which was the great favour of architectural design in that period. Three basement floors are used for mechanical service and parking. The floor space index is 13.

There is a total area of about sixteen acres of office space in the building, providing accommodation for five thousand people. Fascinating sculptures design the large entrance hall and bank on the ground floor. To aid the social life of the staff, an assembly hall, gymnasium, lounge rooms, billiard, card rooms and bowling alleys are at their service. Furthermore, the classical order of architecture has been used in the massive colonnades which form the principal feature of the main elevation of this building.<sup>66</sup>

The major component of this building is its owner, Sun Life Assurance Company, and described in Table I is the predominent usage analysis in gross area.

W. Percival comments on this monumental office building that "This building can be seen from almost any point in the city and gives some idea of the business that must be done in a metropolis the size of Montreal."<sup>67</sup>

<sup>66</sup> Percival, W.P. "The Lure of Montreal" p. 76.
<sup>67</sup> Ibid, p. 76.

# TABLE I

## MAJOR COMPONENTS OF SUN LIFE BUILDING

Floor	Area for Office Section	1,100,000	Sq∙	Ft.
Floor	Area for Other Facilities	255,000	Sq.	Ft.
Total	Floor Area	1,355,000	Sq∙	Ft.

Site Area 85,000 Sq. Ft.

F.S.I. 13

	Type of Usage	Floor	Area		Percentage
Office Section (Incl. Banking)	Financial	470,000	Sq.	Ft.	35
(0)	Industrial	450,000	u	n	33
	Utility	20,000	H	n	1.5
	Government	6,000	Ħ	n	0.5
	Professional	134,000	n	Ħ	10
	Others	20,000	11	18	1.5
		1,100,000	Sq.	Ft₀	81.5
Other Facilities	Service & Mechanica	1 170,000	Sq.	Ft.	12.5
	Parking	85,000	H	11	6
		255,000	Sq∙	Ft.	18.5
Total		1,355,000	Sq.	Ft.	100
		<u> </u>			

### ii. The Canadian Imperial Bank of Commerce Building (Figures 29, 30, 31)

The original part of the Windsor Hotel has been obsolete for many years. In 1958, a syndicate of Montreal businessmen bought the property and proposed demolishing the old wing to provide a 45,000 square foot building site. At this stage, the Canadian Imperial Bank of Commerce and others formed Dorchester Commerce Reality Limited, which bought the property and began to develop the project.<sup>68</sup>

The project was designed by Peter Dickinson to provide three garage floors, two banking floors, ground and first basement, and 43 tower floors, three being occupied by bank offices. It is located on a three corner site, bordered by Dorchester, Stanley and Peel, facing Dominion Square on the west side.

The floor space index of 14.4 was compiled to give as much prestige as possible, and resulted in a slab land coverage of about 52 percent. Out of its 45,000 square feet, 22,000 square feet have been allocated for landscaping. Part of this area is a paved setback from Peel Street, but a small plaza has also appeared. It is bordered by the old stone of the Windsor Hotel.

"It is a fairly formal area mainly serving the employees of the building. The other side was set aside for a car entrance space leading to the garage in the basement. Its fourth side is open to the more informal Dominion Square with its trees, pigeons and benches. The

<sup>68 &</sup>quot;Canadian Imperial Bank of Commerce" R.A.I.C. Journal, November 1962 p. 50.

s tanley



dorchester

PLAN

Fig. 29 C.I.B.C. Building scale 1": 50'

peel

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Fig. 30 The Canadian Imperial Bank of Commerce Building - View



Fig. 31 The Canadian Imperial Bank of Commerce Building - Plaza plaza is so small that it does not effect enclosure of Dominion Square. It provides a good setting for the principal tenant.<sup>869</sup>

The building tower occupies an area of 14,000 square feet and rises 603 feet above Dorchester Boulevard West. A sub-structure, three and a half floors in depth covers the entire site of 45,000 square feet. The tower contains 39 floors of rentable office space, five mechanical floors and an observation gallery above roof level. A one storey extension to the north at ground level serves as the main bank hall. The rental floor area is 480,000 square feet or 11 million cubic feet. The broadcasting tower is 185 feet above the main roof. The Observation Deck on the 43 floor is some 60 feet above the level of Mount Royal's mountain look-out.

Basic planning of a tower of this kind is of course centered around the problems of vertical transportation. Three banks of elevators divide in low rise, ground to 15th floor; mid-rise, 15th to 29th; high rise, 29th to 41st. A small elevator serves the observation gallery at the 43rd floor level. All elevators stop at the 15th floor which has been reserved for the general function of the building, such as management office, restaurant, barber shop etc.<sup>70</sup>

Five floors are entirely given over to mechanical services. The 16th floor level equipment serves the lower levels; main heating and air conditioning equipment on the 42nd floor level, serves down to the 17th floor.

<sup>69</sup> Hoffmann, op. cit. p. 131.

<sup>&</sup>lt;sup>70</sup> "Canadian Imperical Bank of Commerce" R.A.I.C. Journal, November 1962, p. 50.

The major component of this building is its owner, the Canadian Imperial Bank of Commerce, and described in Table II is the predominant usage analysis in gross area.

### TABLE II

### MAJOR COMPONENTS OF THE CANADIAN IMPERIAL BANK OF COMMERCE BUILDING

Floor Area for Office Section	600,000 Sq. Ft.
Floor Area for Other Facilities	227,000 Sq. Ft.
Total Floor Area	827,000 Sq. Ft.

Site Area 45,000 Sq. Ft.

F.S.I. 14.4

	Type of Usage	Total Occupied Floor Area	Percentages
Office Section			
(Incl. Banking)	Financial	264,000 Sq. Ft.	33
(Incl. Danking)	Industrial	200,000 Sq. Ft.	24
	Professional	9,800 Sq. Ft.	1
	Others	126,200 Sq. Ft.	<u>15</u>
		600,000 Sq. Ft.	73
Other Facilities	Restaurant & Shops	14,000 Sq. Ft.	2
	Observation tower	8,000 Sq. Ft.	1
	Mechanical & Service	70,000 Sq. Ft.	8
	Parking	135,000 Sq. Ft.	<u>16</u>
		227,000 Sq. Ft.	27
		·	—
Total		827,000 Sq. Ft.	100

Construction on the site was begun in October 1959. The first tenants moved into the building in March 1962, some thirty months later. The banking floors were occupied by July 1962.

This building reflects the modern prestige skyscraper with its facilities for parking and a plaza of its own. Added to this, is its prime location facing Dominion Square and Dorchester.

Both the Sun Life Building and the Canadian Imperial Bank of Commerce Building are centrally located on either side of Dominion Square right in the downtown area.

The Sun Life Building is a classic example with its massive colonnades, setback type design of its time. Dominion Square serves as its front plaza. The C.I.B.C. Building is a modern skyscraper comparable to those on Park Avenue, New York. It has prestige value for its slab-design combined with an open plaza, and having Dominion Square as its front view.

In the present day, a building like the Sun Life still retains its historic landmarks as well as its usage. More buildings like the C.I.B.C. which is contemporary, plus new features, will be built to meet the requirements of tomorrow.

#### Projects in Downtown Montreal

#### i. C.I.L. House (Canadian Industries Limited) (Figures 32,33,34,35,36)

C.I.L. House was planned by Skidmore, Owings and Merrill, and houses about 5,000 people. It occupies one city block on the southeast corner of Dorchester and University Street. The building covers only forty percent of its little more than one acre site. A plaza facing Dorchester Boulevard and more open space behind the building ensures good daylighting. The plaza is a paved area without enclosure. It is slightly above street level and serves as an elegant forecourt to the building.<sup>71</sup>

The lobby on the ground floor faces out onto the 150 foot wide plaza which sets the building back 53 feet from Dorchester Boulevard. Total height of the building is 440 feet from sidewalk level. There are 34 levels (2 mechanical and 32 offices) with a total of approximately 660,000 square feet above grade; 4 levels, with a total of approximately 170,000 square feet below grade. A typical tower floor is approximately 20,000 square feet.

Beneath the lobby is the shopping concourse with various stores, and a restaurant seating 350 people. This concourse is accessible directly from University and Union Streets, and from the main lobby by escalators. There are three floors of underground parking, accommodating approximately 300 cars; garage areas are mechanically exhausted and ventilated.

The building is fully air conditioned, three heating boilers, two air conditioning units and other mechanical and electrical equipment are located on the 10th and 33rd floors and second basement.

<sup>71</sup> Hoffmann, op. cit. p. 135.



Fig. 32 PLAZA



C.I.L. House scale 1":100'

# Fig. 33 CONCOURSE



\*



Fig. 36 C.I.L. House - Plaza

Two banks of three self-operating high speed elevators serve the lower 16 floors and another two banks of three serve the upper 16 floors. There are also private and service elevators, and other means of mechanical vertical transportation for mail, materials and heavy equipment.

The main lobby is on the ground floor, which also contains banking and trust company facilities. Floors are of terrazzo and walls of travertine. The ceiling is completely luminous and lighting is diffused through sheets of white acetate.<sup>72</sup> The horizontal directory is made of block granite and stainless steel with a plate glass cover. Facing two large streets has permitted a floor space index of 15.8. "It is rather a pity that most of the open space either lacks enclosure, or is entirely inaccessible. Limitations, such as the site of the lot, the high land value and its corner site, together with the floor space index, have more or less determined the shape of the building and the space around it."<sup>73</sup>

Total cost of the building is thirty million dollars and was completed in 1962. The major components of the building are occupied by Canadian Industries Limited and Royal Trust Company. The predominant usage is described in Table III in gross area.

 <sup>&</sup>lt;sup>72</sup> "C.I.L. House, Montreal" The Canadian Architect, June 1962 p. 54.
 <sup>73</sup> Hoffmann, op. cit. p. 136.

The feature of this building shows that the modern structure is devoted with fully luxurious equipment and an urban plaza. The shopping area is comparatively small in size, but it serves the office workers and the shoppers.

### TABLE III

## MAJOR COMPONENTS OF C.I.L. HOUSE

Floor	Areas	for Office Section	610,000 Sq.	Ft.
Floor	Areas	for Other Facilities	<u>216,000</u> Sq.	Ft.
Total	Floor	Area	826 <b>,000 Sq.</b>	Ft.

Site Area 44,000 Sq. Ft.

F.S.I. 15.8

	Type of Usage	Floor Area	Percentage
Office Section	Financial	198,000 Sq. Ft.	24
(Incl. Banking)	Industrial	368,000 " "	<u>14</u> .5
	Utility	2,000 n n	0.5
	Government	7,000 " "	1
	Professional	24,000 " "	3
	Others	11,000 " "	1.5
		610,000 Sq. Ft.	74.5
Other Facilities	Shopping Promenade	44,000 Sq. Ft.	6
	Parking & Service	132,000 " "	14.5
	Mechanical	40,000 " "	5
		216,000 Sq. Ft.	25.5
Total		826,000 Sq. Ft.	100

### ii. Place Victoria (Figures 37, 38, 39, 40, 41, 42)

In 1841, Hay Market was enlarged and renamed Commission Square, now called Victoria Square. Some thirty-one years later, in 1872, a statue of Queen Victoria was erected in the Square in honour of the visit of Prince Albert Edward (Edward VII). The statue in this square displays Victoria as she looked when she ascended the throne in 1837, youthful and dignified, a sceptre in one hand, a laurel wreath in the other. The monument contains the one word Victoria.<sup>74</sup>

When uptown Dorchester Boulevard and its raft of splended buildings was underway, many people were predicting that they spelled the end of an era for downtown Montreal. How mistaken they were is proven by the creation of Place Victoria. Though a new era opened uptown, the old families will remain for a long time.<sup>75</sup>

Slum clearing surrounding Victoria Square has considerably increased the flow of traffic. In addition, redevelopment has permitted erection of one of the largest office complexes in the city.

The project is the first twin 47 storey office tower in the heart of the financial district of Montreal. The original plan of this project was three towers. Because of the financial problems and mostly for the beauty and prestige in the open air, this was reduced to two. It is expected that the full facilities of Montreal's financial district

- 74 Percival, op. cit. p. 61.
- 75 Percival, op. cit. p. 61.



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# METRO ARCADE

Fig. 39 PLACE VICTORIA scale lin.: 100 ft.
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Fig. 40 PLACE VICTORIA scole lin.: 100 ft.

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Fig. 41 Place Victoria - View



Fig. 42 Victoria Square Redevelopment

will be housed in the towers. This would mean both the Montreal and Canadian Stock Exchange, the Mercantile Bank of Canada, the Mercantile Trust Company, plus broker's office and other facilities related to the financial life of Canada. Finally, the complex will have several restaurants and cafeterias, clubs, auditorium, and other facilities needed to round out the center.<sup>76</sup>

"The major purpose of this new building is to replace the grey storied structure of the Stock Exchange on St. Francois Street. The institution itself first came into being in 1872. At that time, its daily trading volume amounted to about eight hundred shares. On a busy day now, four million or more shares are traded. It is not unusual for a million shares of mining stock to change ownership in a single days session."<sup>77</sup>

The project was designed by the Italian engineer architect team of Pier Luigi, Nervi and Luigi Moretti with associated and consulting architects Greenspoon, Freedlander and Dunne, and Jacques Morin of Montreal. This new project not only brings the talents of Nervi to the new world again, but also those of Luigi Moretti whose distinctive manner has not been exercised on this scale, nor with this kind of structure before.

"The general layout of the site at ground level has been worked out by Professor Spence-Sales, though his responsibility does not appear to extend to the ways the block itself meets the ground. From

<sup>76 &</sup>quot;High-rise Montreal Financial Center by Nervi, Monetti" Architectural Record, May 1962 p. 190.

<sup>77</sup> Percival, op. cit. p. 62.

this point of view, some uncertainty about the form of the vertical intermediate members seem evident. Comparison of what can be discerned near the top, with the version given in the plan, and the detail view, suggests some difference of opinion about the solution of this member, and this, in turn, may reflect the influence of a sizeable committee of other engineering consultants besides Nervi himself.<sup>878</sup>

The site of the project is bounded by the west side of Victoria Square, St. James, St. Antoine and Craig Streets. The total site area occupies 150,000 square feet. The first of the project rises on the west side of Victoria Square. When both towers are completed, the estimated cost will be 90 million dollars. There is 23,000 square feet on each floor of both towers and will provide a total of 2 million square feet of rentable space when the whole project is completed. According to its sponsors, the first tower is the tallest reinforced concrete office building in the world, reaching a height of 624 feet. The floor space index is about 17.3.

On the foot of the 47 storey towers is a mezzanine section of three floors opened at street level, including a health club, business men's club, and the stock exchange hall. Two basement shopping arcades are used for shops, restaurants, cafeterias and a theatre. An underground parking in the lower two levels accommodate over 1,500 cars.<sup>79</sup>

- 78 "Place Victoria" Architectural Review, January 1962 p. 131.
- <sup>79</sup> "Place Victoria" R.A.I.C. Journal, January 1962 p. 31.

"The interior of these exchanges are as modern as the exterior. They contain automatic trading boards and data processing equipment that turns out statistical information at fantastic speeds. Instead of the former method of recording price changes on the floor of the exchange by means of ticker tape and chalk; board tradings and the information will reach display boards instantly. It is believed this will be the most advanced electronic stock exchange system in the world."<sup>80</sup>

Service to the offices in each tower is operated by twentytwo elevators. The first underground level by escalators; ramps and service elevators serve the remaining underground levels. Each building is completely air conditioned. A complete utilization of underground and other tower areas are made as fallout shelter accommodation.

The buildings concrete corner columns are clad with a precast reinforced shield to keep them from expanding and contracting with Montreal's temperature variations. These columns form triangles, roughly fourteen inches wide at street level, tapering to about half the size at the top. The structural framing system consists of a central spire made up of two perpendicular shear walls, running the full height of the building. At each of the three mechanical (fifth, nineteenth, and thirty-second) the shear walls are extended by horizontal frames of reinforced concrete which are as thick as the floor level and are most monolithically with the four large corner

columns. This framing carries all the horizontal wind and earth quake forces.

The different components in gross area are described in Table IV.

#### TABLE IV

#### PROPOSED COMPONENTS OF PLACE VICTORIA

Total Floor Area

3,280,000 Sq. Ft.

Site Area 150,000 Sq. Ft.

F.S.I. 17.3

Type of Usage	Total Occupied Floor Area	Percentage	
Office	2,394,000 Sq. Ft.	73	
Stock Exchange Hall	150,000 <b>" "</b>	4.5	
Shopping	300,000 " "	9	
Parking	300,000 " "	9	
Mechanical Service	138,000 " "	4	
Observation Tower	8,000 " "	0.5	
Total	3,280,000 Sq. Ft.	100	

The first tower was completed in June, 1965. Construction of the second tower is scheduled to get under way following the Montreal Exposition in 1967.

Although there is no open landscaping plaza within the site area like the other modern complex projects, it shares the advantage of adjoining significant Victoria Square, giving it the same effect of an open air and recreational environment. In addition to that, "a resolution of proposed changes of Victoria Square passed by Montreal City Council has cleared the way for the square to be enlarged and beautified. The resolution authorizes acquisition of properties on the north-west side of the square, linking up that area with Place Victoria."<sup>81</sup>

### iii. Place Bonaventure (Figures 43,44,45)

Place Bonaventure is a trade center proposed for Montreal's burgeoning downtown business district that would provide, for the first time in Canada, a permanent facility for manufacturers and wholesalers of all kinds to maintain permanent showrooms.

The project designed by Affleck, Desbarats, Dimakopoulos, Lebensold and Sise for Concordia Estates, will occupy six acres over the south block of the three blocks of Canadian National Railway tracks bounded by University, St. Antoine, Inspecteur and La Gauchetiere. The building, scheduled for 1967, is dwarfed by more recent skyscrapers. The total cost of the project will be 75 million dollars.

The content and form of the project, most of it over the C.N. Railway tracks, were mainly determined by the location in relation to Montreal's central area and the surrounding region. In effect, this location is a crossroad between the old downtown area around St. James Street, and the newer urban core along Dorchester Boulevard. The center will be at the hub of Montreal's traffic pattern, both vehicular and

<sup>81 &</sup>quot;The Montreal Star" December 29th, 1964.



Fig. 43 PLACE BONAVENTURE scale lin.: looft.



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Fig. 44 **PLACE BONAVENTURE** scale lin.: 100 ft.



Fig. 45 Place Bonaventure - Model

pedestrian. On or near the site will be commuter railroads, the Trans-Canada Highway, and terminals for subway lines. Place Bonaventure will be connected with the extension complex of enclosed pedestrian walkways linking Place Ville Marie, Queen Elizabeth Hotel, C.N. headquarters and Central Station. These ways will eventually extend south to Windsor Station, and possible Place Victoria.

The center will encompass an exhibition and convention area of 315,000 square feet, 200,000 of it on one level. The merchandising space of 1,000,000 square feet will include a number of permanent wholesale showrooms. There will also be a hotel, shopping concourse, parking and other related service facilities, which will include an auditorium and associated meeting rooms. The floor space index is about 11.

The shopping concourse level is envisaged as the distribution floor for the pedestrian, with subway and commuter train connections at the center, with outlets to the city via both outdoors and enclosed connections at the four corners. Parking is below the commuter train area. Immediately above the shopping concourses is the exhibition hall, developed as a double height space with convention facilities and small exhibition rooms, located in mezzanines above the exhibition level space which can be divided in a flexible manner to suit long term leases for showroom and display facilities.<sup>82</sup>

The roof top hotel is developed to provide a maximum of functional and visual impact, both for the project itself and the city

<sup>&</sup>lt;sup>82</sup> "Trade Center to advance Montreal Downtown" Progressive Architecture May 1964 p. 60.

at large. The hotel rooms are grouped around a central roof top court that will be enclosed in a combination of opaque and transparent roofs, sheltering a swimming pool, tropical gardens, terraces and fountains.

Since Place Bonaventure is considerably lower than the surrounding towers, this roof-top development will be one of the most important visual aspects of the project. Enclosed air conditioned terraces and gardens are also envisaged as a solution to the rigorous of the Montreal climate which renders an open air plaza unusable for many months of the year.

Both the structure and enclosing wall of Place Bonaventure will be reinforced concrete. Exposed surfaces will in general be treated in a manner to aggregate or otherwise enrich the surface. The exhibition hall is essentially an inward looking space, and glazed panels will be provided to give controlled views and a respite from exhibition viewing.

"The above program led to the development of a relatively low, massive building to provide the large uninterrupted floor areas required for exhibition and merchandise mart facilities. This form will provide a strong contrast to the surrounding glassy towers set on their open plazas and square, although the walls of Place Bonaventure are relatively opaque, the four corners are opened up to the city to show the variety of life within and to open the floor to the significant urban views on all sides. The corners are also envisaged as the points of connection for pedestrian bridges and tunnels linking the project to adjacent facilities, such as vertical circulation, elevators and

escalators between the buildings and the steeply sloping peripheral streets."  $^{83}$ 

The following analysis in Table V indicates the different components in gross area.

#### TABLE V

#### PROPOSED COMPONENTS OF PLACE BONAVENTURE

Total Floor Area

3,380,000 Sq. Ft.

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Site Area 260,000 Sq. Ft.

F.S.I. 11

Type of Usage	Total Occupied Floor Area	Percentage	
Hotel	520,000 Sq. Ft.	15	
Winter Garden	260,000 <sup>n</sup> <sup>n</sup>	7	
Merchandise Center	1,000,000 " "	33	
Exhibition Hall	315,000 " "	8	
Shopping	260,000 " "	7	
Station	260,000 <sup>w</sup> <sup>w</sup>	7	
Parking	765,000 " "	_23	
Total	3,380,000 Sq. Ft.	100	

"With almost every conceivable means of ground transportation serving the building, and with the total inadequacy of

83 "Place Bonaventure" Canadian Architect, April 1964 p. 1.

space available in the downtown area, the developers should be well rewarded for the logic of their planning."<sup>84</sup>

iv. Place Ville Marie (Figures 46,47,48,49,50,51)

Place Ville Marie was named after the first settlement on Montreal Island in 1642 by Paul de Chomedy de Maisonneuve. The twentytwo acre site consists of three blocks owned by the Canadian National Railways (C.N.R.) and its history dates back to the early part of this century, when it was acquired by incorporation of railroad property. C.N.R. management realized, from the very beginning, the importance of the site and that for the benefit of the city as well as of the property itself, all three blocks must be developed together within the framework of a single master plan. This determination of C.N.R. management to utilize the civic as well as the commercial potential of the site is evident throughout the site's history.

As early as 1913, plans were drawn up to replace the old terminal with a central station which would include office and rental space. Necessary legislation was passed, and excavation started, but two world wars and the depression, stopped the project at its inception.<sup>85</sup>

"Thirty years ago Dorchester Street, at this point, was carried upon a clumsy bridge spanning the railway cut which extended for

<sup>&</sup>lt;sup>84</sup> "Place Bonaventure" R.A.I.C. Journal, May 1964 p. 16.

<sup>&</sup>lt;sup>85</sup> Rowan, John "Place Ville Marie" Progressive Architecture, February 1960 p. 125.

a couple of blocks either way. On the south side following the creation of central station, development occurred in accordance with a plan prepared after considerable study. It was essentially a scheme to provide a number of rectangular building sites surrounded by superficially normal city streets covering the vast buried track area. To some extent these streets are normal, although they are little used, dismal to walk along, and have no architectural quality.<sup>#86</sup>

By 1943 the station was the only building built. In 1945, Jacques Greber, a city planner was consulted. It became clear that traffic would increase as the building went up on the site, and an understanding was reached between the city and C.N.R. officials that the bordering streets should be widened. In addition, C.N.R. agreed to conform to an improvement suggested by Greber, and to reserve space on the north block for a plaza, which would serve as an appropriate termination for a widened avenue (McGill College) which links McGill University campus with the site. This concept is the key to the master plan as evolved by Pei's office.

Canada underwent an enormous postwar economic growth and during that prosperous period, C.N.R. proceeded with the realization of the project. By 1955, there were three buildings on the site, Central Station and two office buildings; a fourth building, The Queen Elizabeth, a large convention hotel was under construction in the central block.

<sup>86</sup> Bland, John "Place Ville Marie, Appraisal" R.A.I.C. Journal February 1963 p. 47.

As the economic boom continued, C.N.R. management decided to reevaluate the plans and to complex the development of the property. A search was made for an organization strong enough to finance and build an urban center of the magnitude which C.N.R. felt the site demanded. At this point, Zeckendorf entered the picture and found a situation with enormous real estate possibilities.

The path of business expansion in Montreal was radical. Commercial growth thrusted diagonally across the town, and moved steadily northwest from the old city center towards the new retail and entertainment areas. The C.N.R. site was an empty block directly in the middle of this path of development. The inevitable conclusion was that the site had great potential and could be exploited for retail office and banking facilities. Further investigations showed that during the twelve year postwar period, three million square feet of office space was constructed in downtown Montreal, at a rate of 250,000 square feet per year. This rate was considered sufficient by local businessmen: there was no shortage of office space and it was believed that construction was in keeping with the rate of obsolescence and the natural growth of the city. Zeckendorf thought otherwise. His well known theory is that modern corporations need large areas of at least 20,000 square feet of floor space in buildings with considerable prestige. Average floor areas in Montreal were only 10,000 square feet and most buildings lacked the required luxury. Hence the decision to develop the site as a monumental group of buildings with a 1,500,000 square feet office tower as the main element. Webb & Knapp (Canada)

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SHOPPING PROMENADE







Fig. 50 Place Ville Marie - View



Limited was formed and commissioned by C.N.R. to prepare a master plan for the 22 acre three blocks, and also to design and construct the seven and a half acres in the north block, which was called Place Ville Marie. Pei's office began preparation of the plans.<sup>87</sup>

The site is bordered by Cathcart, University, Dorchester and Mansfield Streets. The tall office tower was an important consideration in the master plan which Webb & Knapp of Canada Limited hired architect I.M. Pei to make in 1956. This speculative plan which cost Webb & Knapp \$350,000 dollars was approved in 1957 by the owner of the property. For the master plan Zeckendorf asked the architects to provide "a complex of buildings related to each other and at the same time, organically wed to the rest of Montreal," including an institutional type office tower containing 1.5 million square feet of floor space.<sup>88</sup>

The project consists of a cruciform skyscraper, a spacious plaza, a smaller four storey office building and a sunken pedestrian promenade. The cruciform building is 585 feet in height with 42 floors of office space. Place Ville Marie is a pedestrian-only area with parking and servicing below. A sunken promenade terminates in a little square at University, flanked by a legitimate theatre seating 700 persons and a cinema with 200 seats below. Under the office tower is a concourse with shops, restaurant and parking space.

<sup>87</sup> Rowan, John "Place Ville Marie" Progressive Architecture, February 1960 p. 126.

<sup>&</sup>lt;sup>88</sup> "Place Ville Marie" Architectural Record, February 1963, p. 130.

Place Ville Marie has the greatest total area, 3,070,000 square feet, including facilities below plaza level of any office building in the world. The tower alone has a working population of 10,000. Daily, 600,000 people enter downtown Montreal as visitors and employees, and one out of ten, 60,000 will walk through Place Ville Marie. This was one of the reasons for creating vast areas for pedestrian use.<sup>89</sup>

Its eventual total cost was estimated at more than 105 million dollars, a near record for a single speculative project. The 1.5 million square feet of net rentable space in the tower alone equalled all of the first class office space building in Montreal since World War II.<sup>90</sup>

The Associate Architects are Affleck, Desbarats, Dimakoponlos, Lebensold, Mechaud and Sise. The building coverage for the whole project including the future proposed 13 storey office building for I.B.M. at the west end of the plaza which construction began late in 1964, is just 50 percent. The floor space index is about 8.9. Place Ville Marie was completed in 1961.

The economic health of Place Ville Marie and the rest of downtown will also depend on the smooth flow of traffic into and from the surrounding suburbs and the outlying regions. Even now this flow is seriously hampered by vehicles moving through the city's main streets

<sup>90</sup> "Place Ville Marie" Architectural Forum, February 1963 p. 77.

<sup>89 &</sup>quot;Place Ville Marie Brochure" Webb & Knapp (Canada) Ltd.

on their way from one part of the island to the other.91

"The planner realized that it would be disastrous if a plan for this commercial center did not solve the traffic problem. Intensive traffic studies were undertaken. Studies did how that 30% of vehicles in the mid-town area are just passing through and traffic density charts indicated that there were already danger signals of approaching overcrowding. This demonstrated the need for a major ring road around the central area, and that the projected east-west expressway be part of the ring road system. Movement of traffic within the site itself was solved by an underground roadway system, connecting all major elements of the three blocks."<sup>92</sup>

Place Ville Marie demonstrates that enlightened development can produce well designed architecture for business, woven skillfully into the downtown scene. The Place Ville Marie buildings center on a highly unusual, three dimensional plaza which assumes such importance in the concept that the 42 storey office tower becomes an incident. The tower was designed to relate to the plaza, not vice versa. As the design architect Harry Cobb said "This is not a civic institutional project, but a commercial one. It seeks through its appearance to dignify the activity to which it is devised, and in doing so, should add to the prestige of the entire central city."<sup>93</sup>

- 92 Virak, op. cit. p. 161-162.
- <sup>93</sup> "Place Ville Marie" Architectural Record, February 1963 p. 134.

<sup>91</sup> Rowan, John "Place Ville Marie" Progressive Architecture, February 1960 p. 126.

The broad expanse of the open plaza is a refreshing respite from the heavy congestion of buildings and traffic in downtown Montreal. All the buildings of Place Ville Marie have their main entrances opening onto the plaza. It is practically at street level on three sides. To the north, a tree lined mall bridges Cathcart Street with St. Catherine Street. This plaza is not just another of the currently fashionable tall building platforms, but an enclosed, well defined space that both laterally and vertically with complex buildings enhance the central city. At the northern boundary, two new four storey office buildings for Imperial Oil Company, work in with the plaza and blank an opening into McGill College Avenue, creating a vista reaching up the hill to McGill University and Mount Royal beyond. The office tower to the east is a major plaza element with its shaft and spreading base consciously related to both plaza and city. The plaza pushed through and around the tower lobby to form a shopping esplanade at the north, and ends westward where it will build another 13 storey office building.

The visual link between the lower level of the plaza and the promenade is achieved by the four open wells. By means of these four sunken courtyards, the plaza is joined vertically, both visually and functionally, with the lower level shopping promenade and pedestrian link to nearby hotel, bus terminal and helioport. Designing the wells as a square central pattern emphasize the plaza shape. The wells bring visual relief to the broad paved expanse and create daylighted courtyards below. The promenade enters into streets on three sides. Stairways and escalators lead up onto the plaza and

into the lobby and down to the garage. Two sheltered passage ways lead under Dorchester Street to the C.N.R. station. 160,000 square feet of shops line the bustling promenade, to serve the public passing to and from the center of Montreal, and the thousands employed at Place Ville Marie. The shopping area is especially well handled architecturally; a modular framework of aluminum and glass serves to tie the shops together, yet allows each a great freedom of arrangement. The two levels below can accommodate 2,000 automobiles, while the railway tracks are at the lowest level. For this distinguished setting, a program has been planned for year-round activities, such as cultural and industrial exhibitions and special civic observances.

Three special truck docks service Place Ville Marie. The largest reached by a private driveway which has room for six trailer trucks, six 24 foot trucks and eight panel truck at one time.

For the first time in Canada, a downtown shopping district has been tailored to the demands of a modern metropolis. For year around shopping comfort, the promenade is heated and air conditioned, satisfying the retail potential represented by tens of thousands of office workers, visitors and tourists. A new fashion center was created, to include a wide variety of men's and ladies wear specialty shops. Another feature was the half dozen different restaurants located among the shopping areas. One restaurant can be seen in the center screened by boxed evergreens.<sup>94</sup>

<sup>94</sup> "Place Ville Marie Brochure" Webb & Knapp (Canada) Ltd.

The cruciform building provides nearly one acre of rentable space on every floor, half as much again as any other office building in Canada. It is therefore particularly suited to the needs of major corporations which require large area per floor for better office efficiency. This would be difficult in a conventional office building, in which it would be obliged to settle for an anonymous fraction of a rectangular floor. Elevators and other services at the core of the building have been spaced to allow wide corridors to unite each floor into an efficient whole. The separate wings are also easily subdivided or connected to provide for tenant's future expansion.

An observation tower located on the 43rd floor provides a wide view of downtown Montreal. The main air handling units are located in the lower mechanical floor, first and second mechanical penthouses; they serve twenty floors up and twenty floors down respectively.

More than ten thousand people stream daily into the lobby through wide portals in the building's four wings, which open onto the plaza to the north and west, and onto the streets to the south and east. People also arrive by stairs and escalators from the shopping promenade below, and will be taken up to the fourty-two office floors above in thirty-two automatic elevators, rising at speeds up to 1,200 feet per minute from the lobby. In the four quadrants are large retail areas, looking outward, like the lobby onto the plaza and the surrounding streets.

Directly above these retail quadrants, at the foot of the cruicform building and overhanging them, is the Place Ville Marie Branch

of The Royal Bank of Canada, which can be reached by the escalators from the lobby. The store banking hall projects 12 feet over the sidewalk and shelters the commercial section in the four quadrants, whose conspicuous position makes them especially suited for institutional tenants, such as trust companies and airline offices. In the center, a short flight of steps leads up to the glass enclosed lobby. Some notion of the scale of Place Ville Marie can be gained from the dimensions of the lobby. It is over 50 feet in height where several departments operate which belong to the Royal Bank of Canada.<sup>95</sup>

Headquarters of the Royal Bank of Canada occupies 20% of the building. The other major components are the Montreal Trust Company, The Aluminum Company of Canada and Air Canada. The predominant usage in gross area are divided in Table VI.

Place Ville Marie is sure to spur major construction in the mid-town area. Indeed since the plans were announced, construction has begun on four new office buildings in the vicinity along Dorchester Boulevard. On either side of Place Ville Marie, are a series of smaller office buildings. Place Ville Marie is linked to St. Catherine Street and the city's major department stores by a ground mall.<sup>96</sup>

"One can suppose that it was Zeckendorf himself who saw that the railway cutting near the heart of Montreal could not only be built

<sup>&</sup>lt;sup>95</sup> "Place Ville Marie Brochure" Webb & Knapp (Canada) Ltd.

<sup>96 &</sup>quot;Place Ville Marie Brochure" Webb & Knapp (Canada) Ltd.

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# TABLE VI

## MAJOR COMPONENTS OF ROYAL BANK BUILDING (PLACE VILLE MARIE)

Floor	Areas	for Office Section	1,880,000	Sq∙	Et.
Floor	Areas	for Other Facilities	1,190,000	Sq∙	Ft.
Total	Floor	Area	3,070,000	Sq.	Ft.

Site Area 330,000 Sq. Ft.

F.S.I. 8.9

	Type of Usage	Total Occupied Floor Area	Percentage
Office Section	Financial	746,000 Sq. Ft.	34
(Incl. Banking)	Industrial	518,000 " "	17
	Utility	184,000 " "	6
	Government	» n 000وبلا	0,5
	Professional	334,000 " "	10.5
	Others	78,000 H H	2.5
		1,874,000 Sq. Ft.	60.5
<u>Other Facilities</u>	Shopping Promenade & Theatre	370,000 Sq. Ft.	12
	Parking	700,000 " "	23
	Mechanical	120,000 " "	4
	Observation Tower	6,000 " "	0.5
		1,196,000 Sq. Ft.	39•5
Total		3,070,000 Sq. Ft.	100

over as had long been the intension, but that an even greater area could be included by extending the site out to the surrounding streets and dealing with the whole space as one unit. All the previous proposals appear half hearted, compared with this courageous idea of making, in a huge city, the setting for a single great building flanked by two minor ones. The decision led to the most important aspect of the design, namely services by trucks and approached by cars in swift and direct ways, whilst the whole site is entirely clear of vehicles.<sup>n97</sup> This new standard in civic design makes the normal manner of providing service access to buildings seem crude.

At the foot of this building is something that is again unique; a complete modern shopping district suddenly thrown open in the business part of the city and yet removed from the rush and fury of traffic. The several levels of Place Ville Marie have become convenient thoroughfares for thousands who linger to shop and dine. They visit the plaza to inspect the displays staged there; or to enjoy the open air, the marvellous view of Mount Royal, and the sunlight reflected by the gleaming tower above them.

Place Ville Marie is revolutionary, a modern office building and the largest in Canada, standing majestically beside its own monumental plaza. It is a smart new shopping district in the heart of Montreal and a whole city center where the business commercial and cultural life of a busy metropolis converges.<sup>98</sup>

"Place Ville Marie Brochure" Webb & Knapp (Canada) Ltd.

<sup>97</sup> Bland, John "Place Ville Marie Appraisal" R.A.I.C. Journal, February 1963 p. 50.

<sup>98</sup> "Pla

A planning assessment of the four complex commercial projects in downtown Montreal (Figures 52,53) must be based upon an understanding of the evolution of urban growth. The prime generating force for the four stalagmitic buildings is the tendency toward centralization. Commercial and financial establishments are competing continually for central location of their premises.

"One must immediately dispel the popular myth that any 'hole in the ground' or sizeable vacant plot is automatically a potential Place Ville Marie site. It is an established fact, and plain to see, that vacant lots abound in our cities. Less implicit, however, is the magnitude of this atrophy in urban caves as demonstrated by a survey of over twenty American cities showing that vacant lots averaged 44.7 percent - yes, almost half of their acreage."<sup>99</sup>

Examining the disposition of the four complex projects, it becomes apparent that they are paralled together on University Street adjoining the most important transportation terminus. In addition, the two railway stations, the inter-urban bus terminal, the aviation terminus building and the further metro station, one finds in the immediate vicinity the center of communication. Finally, it is recognizable that a newly widened major traffic artery, Dorchester Boulevard, serves as the backbone for all four developments.

Thus the existing demand of office space in the central location was met by four complexes in the area, in close proximity to the

<sup>&</sup>lt;sup>99</sup> Schoenauer, Norbert "Place Ville Marie" Canadian Architect, February 1963, p. 55.




transportation and communication center, made more accessible recently by the widening of an east-west traffic artery. In other words, all four developments occurred in strict conformity with the normal ecological changes in urban growth.

By its inherent nature, the elevated plaza of Place Ville Marie allows the bridging of vehicular traffic bring about so-called vertical traffic separation. This is a design approach so often strived by planners and so seldom achieved. Apart from the fact that accessibility is hampered by it being situated below this plaza provides an alternate route to and from the office tower and pedestrians coming from the main shopping street.<sup>100</sup> In the other direction, an underpass from the shopping area of Place Ville Marie connects with The Queen Elizabeth, Central Station and Place Bonaventure. Furthermore, a proposed vast underground passage way from Place Victoria is planned to reach the above two projects.

C.I.L. House features a small plaza, slightly raised above the sidewalk. Consequently, their use is more imminent yet not quite ideal because continuity of pedestrian movement is still inhibited by their ingular character. The other two projects, Place Victoria and Bonaventure, however, created no open plazas, but the former has the advantage of Victoria Square, while the latter, the underpass on its slopping site.

<sup>100</sup> Schoenauer, Norbert "Place Ville Marie" Canadian Architect, February 1963 p. 56.

In dividing the characters of the four projects, the description is as follows: C.I.L. House features a modern plaza office with its small shopping area to serve its domestic workers and shoppers from its neighbourhood. Place Victoria houses the full facilities as well as banking and financial offices, stock exchanges, its shopping facilities are serving the financial district of Montreal. Place Bonaventure provides permanent facilities for manufactures and wholesalers of all kinds to maintain permanent showrooms, hotel and shopping area is basically created for the convenience of railway passengers. Place Ville Marie forms an institutional type of commercial building with a monumental plaza, its shopping area can be devoted as the extension of the main downtown shopping street, and in a sense, a regional shopping center.

#### Projects in Westmount

# i. Westmount Center (Figures 54,55,56,57)

Westmount Center is a unique integrated, residential and commercial complex, designed by Ludwig Mies Van der Rohe, internationally acclaimed architect. Mr. Van der Rohe is the project's consulting architect collaborating with the local firm of Greenspoon, Freedlander & Dunne. In addition to that, Professor H. Spence-Sales specialized the site planning for the urban setting of the entire development.

"Mr. Van der Rohe, who considers this center to be an outstanding example of urban redevelopment; combining the functional elements of residential and commercial structure with its own attractive



PLAZA

Fig. 54 WESTMOUNT CENTER SCALE IIN: 100FT



RETAIL

Fig. 55 WESTMOUNT CENTER SCALE IIN: 100 FT





surrounding."<sup>101</sup> The owners and developers of this project are Westmount Center Incorporation, an associate company of MonDev Corporation Limited, which is the development arm of the Montreal Trust Company. The estimated cost is 20 million dollars.

The new complex is to be contained in an area of 150,000 square feet, bordered on the north by Western, on the west by Greene, on the south by St. Catherine St. West, and by Wood Avenue at the eastern boundary. The residential buildings are located in the Western Avenue area, while the commercial group is centered on St. Catherine Street.

The complex will include a twenty storey office building, the separate apartment buildings of twenty-one storeys each, a two storey department store, a shopping mall of 125,000 square feet which will be heated in winter and air conditioned in summer, and will provide two floors for underground parking of 1,328 cars. The buildings will be above the plaza and will occupy only approximately 42 percent of the total land area, with the balance taking the form of an open, landscape plaza. The floor space index is 5.5.

The open plaza forms an integral part of the complex and is carefully designed so that each building is a completely detached unit. All buildings are located in such a way as to provide ample open area for pedestrian circulation; is surrounded by walkways and garden areas at plaza level. The plaza, which includes a fountain, skating rink, and a first-class restaurant, will give a park-like setting available at all

<sup>101 &</sup>quot;Westmount Center Brochure" Westmount Center Inc.

times for use by the public.<sup>102</sup> The stores will feature the latest styles of fashions and carry high quality, luxurious merchandise.

There will be 200,000 square feet of rentable area in the office building. The two apartment buildings will include four different kinds of living quarters, with a total of 320 units. The size of each type are 722 for Studio, 873 for One Bedroom, 1,329 for Two Bedrooms and 1,468 square feet for Three Bedrooms in every single unit.

It is planned that the construction for Westmount Center will begin in the Spring of 1965, and will be completed in 1967 to coincide with Canada's Centennial celebrations and with the opening of the Exposition.

The different components in gross area are illustrated in Table VII.

Commenting on the new project, Mayor C.H. Drury of the City of Westmount stated that "Westmount, like other progressive cities, is now involved in the reshaping of obsolescent parts of its city in order to invigorate urban life and in order to strengthen the economic base of the municipality. Westmount Center is one of the first of these private interests, on their own initiative and with their own resources, have acquired an obsolescent part of our city and will replace it with a modern complex of stately and functional buildings arranged on a spacious plaza. Mier Van der Rohe, the eminent architect, has guided the developers and their technical advisors towards the realization of an

102 "Westmount Center Brochure" Westmount Center Inc.

# TABLE VII

# PROPOSED COMPONENTS OF WESTMOUNT CENTER

Total Floor Area

1,444,000 Sq. Ft.

Site Area 150,000 Sq. Ft.

F.S.I. 5.5

Type of Usage	Total Occupied Floor Area	Percentage	
Office	185,400 Sq. Ft.	12.5	
Apartment	588,000 <b>* *</b>	40	
Shopping	200,000 " "	14.5	
Parking	450,000 " "	31.5	
Mechanical	20,600 "	1.5	
Total	1,444,000 Sq. Ft.	100	
	and the second		

<sup>103</sup> Drury, C.H. Statement at press conference of Westmount Center in the Queen Elizabeth Hotel. November 17th, 1964 from Westmount Center Brochure.

## ii. Atwater Center (Figures 58,59)

Atwater Center is another urban redevelopment, combining more functional elements of residential, commercial and professional structures located just across the street from Westmount Center. This project was designed by Architect, Harold Ship. It will cost approximately 25 million dollars to develop the entire project.

The site is bordered on the north by Western, on the west by Atwater, on the south by St. Catherine Street and by the Royal Canadian Mounted Police Building at the eastern boundary with an area of 22,000 square feet.

The complex will contain two major functions, the towers and a lower structure. The towers will include two apartment buildings, twenty-three and twenty-eight storeys respectively, an eight storey office building and a six storey professional building. The lower structure is directly below the tower and will occupy almost the full site area, which will have five storeys, three floors of parking and two floors of retail areas and two basement floors for the metro station, shopping arcade and storage. On the roof of this structure, an open landscaped plaza will be arranged between the towers. It will form in such a way that each tower is completely detached and providing spacious open areas for recreation in a park-like setting. Furthermore, in the center of the roof plaza there will be an open well to let light penetrate the shopping area. The floor space index is  $\delta_*9$ .

There will be 150,000 square feet of rentable area in the office tower. The two apartments will include a total of 500 units of







SECTION

Fig. 59 ATWATER CENTER scale lin.: 10° ft.

different types, from one to three bedrooms. The professional tower is mainly a medical and health center, with swimming pool. The total retail area will have approximately 500,000 square feet. Included in this development, a department store, shopping center, retail shops, restaurant and a theatre. Directly above the retail area, three floors of parking space can accommodate 2,000 cars, accessible by a vertical car ramp. The metro station will be located on the north side of the first basement with direct access to the retail areas.

The following analysis in Table VIII illustrates the different components in gross area.

### TABLE VIII

### PROPOSED COMPONENTS OF ATWATER CENTER

Total Floor Area 2,361,000 Sq. Ft. Site Area 222,000 Sq. Ft. F.S.I. 8.9 Total Occupied Type of Usage Floor Area Percentage Office 180,000 Sq. Ft. 8 45.000 \* Professional Center 聘 2 696,000 **\*** Apartment 30 500,000 \* Shopping 20 Metro Station 120,000 \* Ħ 6 Parking 600,000 " n 25 Truck and Mechanical Service 220,000 \* Ħ 9 Total 2,361,000 Sq. Ft. 100

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The major functions of this project is of much the same nature with Westmount Center in a general sense, but with professional facilities added. Furthermore, the parking area is higher up on ground level and the urban settlement up to the roof. It will also be completed by 1967.

The two urban redevelopment projects (Figures 60,61) are both situated in the same location and terminated to each other with The Royal Canadian Mounted Police Building at the eastern boundary of the City of Westmount. The new settlement is involved in the reshaping of obsolescent parts of the City of Westmount in order to invigorate urban life and economic base of the Metropolitan of Montreal.

The main function of these two complex projects (not like most ordinary complex) are being concentrated in residential and shopping facilities instead of office. It is because their developers considered the situation of the surrounding areas which is basically residential in this subcenter of Metropolitan Montreal and fulfill their most suitable convenience and requirement. Furthermore, medical facilities will also be added in the Atwater complex to improve their local medical settlement.

The main vehicular traffic circulation is the widened traffic route of Atwater on the east in conjunction with that of St. Catherine and Western Street on both the east and west sides. A future metro station will be located at the first basement of Atwater Center and will give access to the other side of Westmount Center, linking east to downtown and west to suburban areas, as the main transportation facilities of these two projects.





Horizontal traffic separation on Atwater complex is by using a small alley on the west side as the entrance for motor vehicles linking the upper three parking floors with a vertical car ramp. Pedestrian movement between shopping floors and roof plaza is with escalators.

There will be sidewalk level pedestrian entrances from both Greene and Wood Avenue to Westmount Center. The car entrance is from the north side of the center on Western to the underground parking floors. Patrons of the existing Greene Avenue merchants who park their cars will be able to utilize the underground facilities of Westmount Center and exit via escalators to Greene Avenue, thereby providing improved access to adjacent Greene Avenue retailers.

This two urban redevelopment is simulated to each other in a general sense providing residential and commercial and even professional structures. The significance of these two complexes is that they are as advanced as the complex projects in the downtown area. It can be recognized that it is an urban subcenter of this metropolitan area in both financial and commercial aspects. The added residential enterprise is more effected in urban human requirements in our present day. The future metro will link this subcenter and the downtown main center. Together them, they will be two of the monumental complex clusters with their own brilliance in the Metropolitan of Montreal.

The following illustration in Table IX is an analysis in various factors of the above six complex commercial projects in Metropolitan Montreal.

CONTENT OF COMPLEX COMMERCIAL PROJECTS IN METROPOLITAN MONTREAL								
AREA	DOWNTOWN				WESTMOUNT			
	C.I.L. Sq. Ft.	Vic <b>toria</b> Sq. Ft.	Bonaventure Sq. Ft.	Ville Marie Sq. Ft.	Westmount Sq. Ft.	Atwater Sq. Ft.		
Site Area	44 <b>,00</b> 0	150,000	260,000	330,000	150,000	222,000		
Total Floor Area	830,000	3,280,000	3,380,000	3,070,000	1,444,000	2,361,000		
Typical Floor Area	20,000	23,000	260,000	40,000	(1) 10,300(0ff)( (2) 14,000(Apt)( () ()	1) 22,500 (Off) 2) 7,500 (Prof) 3) 15,000 (Apt) 4) 12,000 (Apt)		
Height	山口 Ft。	624 Ft.	<b>185</b> Ft.	585 Ft.	(1) 250 Ft.(Off)( (2) 230 Ft.(Apt)( (1) (1) (1)	1) 100 Ft. (Off) 2) 75 Ft. (Prof) 3) 336 Ft. (Apt) 4) 276 Ft. (Apt)		
Coverage	40%	100%	100%	50%	42%	90%		
F.S.I.	15.8	17.3	11	8 <b>.9</b>	5.5	8.9		
Cost (Million Dollars)	30	90	75	105	20	25		

# TABLE IX

### PART IV. EXAMPLES OF COMPLEX COMMERCIAL PROJECTS IN JAPAN

Architecture and planning is concerned with the structures in which people live, so it also involves any change in people's way of living and manner of like. As a result of the Second World War, some of the great changes were produced that have been seen in the history of the life of the Japanese people.

After the war, America, by virtue of the progress of industrialization, increased its productivity enormously and raised its standard of living. Japan, being closely concerned with American's great natural resources and productive power, tried to create its own industrial state, as a result the force of impact of hastened industrialization was of a higher degree than ever before.<sup>104</sup>

This kind of trend which is to be seen in European and American life influenced Japan through architecture and planning, and as a result of post-war social needs, caused great changes in the form of life of the Japanese people. In the present position of Japanese architecture, it is between world-wide tendencies and architectural traditions of Japan.

During World War II, bombing destroyed cities and towns throughout the country. Democratic reforms, although brought in from the outside by the occupation army, were eagerly welcomed by many Japanese, who hoped for a new society and new age. Architects and Planners were especially elected understandably so, in view of their

Ko'ike, Shinji "Japan's New Architecture" p. 16

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professional aspiration which were directly related to the work of reconstruction.

Even today, most of Japanese housing is of wooden construction, and fires of major scale have been frequent. Because of earthquakes, most large office buildings are not more than twelve storeys.

Most Japanese people live in the large or industrial cities, such as Tokyo, Osaka, Kobe and Yokohama. The central area of every large cities become most highly commercialized. The land, being so valuable tends to develop in multiple usage because of economical and human problems. After 1955, the complex commercial projects have occurred in every large city. The following are some of their significants.

## Tokyu Kaikan and Shibuya Redevelopment, Tokyo (Figures 62,63,64,65)

Shibuya is one of the major centers of Tokyo, it is the transportation gate-way to the central area of the city for the southwestern district. The whole project was started on an existing department store whose owner was the Tokyu Financial Company, one of the large investment organizations in Japan. The main aim is to enlarge the department store under the joint sponsorship of the company, with the support of public funds and the Community Government of Shibuya.

The whole scheme was from the start compositely planned with Shibuya Station as the focal point. This scheme covers

approximately 15 acres and is located near the junction of railway lines and major roads, and the starting point of subway and other bus lines. It should be actually called a masterpiece of transportation center combined with commercial activities.

The major feature of the project are three new towers in addition to the existing department store. They are the Tokyu Kaikan (building), completed in 1956; in the center adjoining the existing Toyoko Department Store; Tokyu Bunka KaiKan (culture building), completed in 1958, on the east connects Kaikan with a bridge. An underground concourse under the main traffic roads, opened in 1960, is accessible by the plaza in front of the department store. There are two proposed plans which will be underway in the near future. The bus terminal on the west and a highway across the center will be built by the government.

Designed by Junzo Sakakura, Tokyu KaiKan was the first complex commercial project in Japan. The huge eleven storey terminal department store occupies nearly a two acre site standing at Shibuya Station where several railways pass through. The building was designed primarily to accommodate the railway station. The building is used by three private railways as their starting point, two to southern districts of Tokyo, while the other, connected on the west side by a bridge goes to the northern district. The national railway passing through from south to north, and the subway from east to west on the third floor, is also the starting point linking the central area of Tokyo. Out of ten million population in Tokyo City, there are one





Fig. 63 Tokyu Kaikan Tokyo - Section



Fig. 64 Tokyu Kaikan and Surrounding, Tokyo



Fig. 65 Tokyu Kaikan, Tokyo - View million passerby who use this building either for shopping or transportation daily.<sup>105</sup> The two floors of railways and subway are linked by escalators from the ground and to the department store for the convenience of passengers.

Situated on the top floor of the Tokyu Kaikan is a 1,500 seat theatre. Immediately under the theatre there is a restaurant with a lovely roof garden and several cafes and bars in the corner of the building.

A pedestrian bridge is linked to the east side. The ten storey Tokyu Bunka Kaikan situated on a two acre site has a different function. There are four different size theatres with a seating capacity from 500 to 2,000. The roof of this structure is a planetarium. The remainder of the building is occupied by real-estate companies, classrooms for commercial schools, specialists shops, restaurants and parking garage.

In front of Tokyu Kaikan there is a plaza with pleasant shubbery and benches in order to beautify the monster-like building. In the center of the plaza there is an access to the underground shopping concourse.

The shopping concourse is located in the middle below the junction of three major roads, with access to the sidewalks of each road. It contains about a four acre site, with a super-market and

<sup>105</sup> Komada, Tomohiko "Organization et Financement Des Immeubles A Usages Multiples" Arch'd'Aujourd'hui, May 1956.

fifty separate stores. It is of the bargaining type store which draws a large amount of people who like to shop there.

The proposed Bus Terminal will also have ten storeys and will be connected with the underground stores. It will contain offices of the transportation companies. The station is sued for the maintenance of the buses and reception halls.

Several restaurants and stores will also be added for the convenience of the passengers. Further more, the highway will be constructed on the south side of the terminal so that the buses will have direct access.

"The efforts by the architects who had to contend with all these huge complex elements and yet produce a unified form must have indeed been great."<sup>106</sup> The development of the underground concourse is the most considerable feature for shopping and pedestrian use to cross the junction of congested traffic roads.

The center not only successfully improved the transportation facilities, but also provided cultural, shopping and commercial attractions.

## Silk Center Building, Yokohama (Figure 66)

Silk Center is located on the harbour in the center of Yokohama City. The design for Silk Center was chosen in limited

106 Koike, <u>op. cit</u>. p. 103.

competition, the winner being Junzo Sakakura. The building completed in 1960, is eight storeys in height, two basement floors and is situated on a 20,000 square feet site.

Since the building was built with the aim of promoting the silk export, specifications called not only for offices, but also showrooms, a hotel, restaurant and shopping as well.

Sakakura chose to divide the building into two vertical levels, the lower block which contains offices and showrooms, has a heavy frame of unfinished concrete with a central core. The outer walls are all of glass but the effect of openness is lessened by the thickness of the beams. In contrast, the upper block, which houses the hotel is extremely open, its glass walls provide each room with an unhampered view of the city and of the Japanese style garden which Sakakura designed for the roof of the lower block.<sup>107</sup> Further more, there is another landscape garden in the front and right handside of the building.

The shopping arcade is located in the basement floor where specialized shops and bank serve the building and out coming people. The hotel section has its own dining room and lobby, as well as a roof terrace which offers a superb view of Tokyo Bay. Since the Silk Center was built on a reclaimed land, Sakakura employed a floating foundation system.

The design of the heavy frame of unfinished concrete in the building is quite artistic and a novel feeling. This type is often seen

107 "Silk Center Building" Japan Architect, April 1960 p. 55.



Fig. 66 Silk Centre Building, Yokohama

in most institutional type of buildings in Japan nowadays. The location is very near to the wharves, as the main shoppers are tourists and it also serves the vicinity.

# PART V ANALYSIS OF THREE COMPLEX COMMERCIAL PROJECTS IN MONTREAL

## History of Central Area

The original site of Montreal was occupied by an Indian village called Hochelaga, which Jacques Cartier discovered in 1535. In 1611 Champlain set up a trading post, and in 1642 Ville Marie de Montreal was founded by Paul de Chomedey, and remained as a permanent settlement.

The first settlers established themselves on the banks of the St. Lawrence close to the St. Pierre river. A fort, a hospital, a mill and a chapel were built and the small community began to take root. The missionary priests were given seigneurial tenure of the island and thus they had both spiritual command and the rights to sell, rent, tax and defend Montreal. Tradesmen and hunters had to stop at the Sault St. Louis rapids before they could continue their journey and slowly they out numbered the missionary workers in Montreal.<sup>108</sup>

At this time, prior to 1700, the settlement occupied a few of the present city blocks, and in 1722, the natural features of the area demarcated the walls of the city, the St. Martin and St. Pierre rivers, and the rapids in the St. Lawrence.<sup>109</sup>

Atherton, William Henry "Montreal 1535-1914" Vol. 1, p. 1-3.
109 Ibid. p. 332

The 18th Century wars between France and Britain for Imperial suppremacy in the Colonies of North America resulted in the cession of Canada to Britain in the treaty of Paris, signed in 1763.<sup>110</sup> The British regime further developed the city with its influx of traders and businessmen, mainly Scotch and Irish. In 1792, Montreal became a town and in 1832, it was incorporated as a city.

For a long time the Montreal downtown area, the district devoted to commerce, banking, and administration stayed confined to the "Coteau St. Louis", which was the founding site of the city, and it remained long after the development of outlying parts was launched.

"In 1873 only a very few establishments of the downtown type were to be seen outside of old Montreal, the Windsor Hotel, the Hay Market, and a cluster facing Bonaventure station. The first changes took place at the end of the 19th Century, and the railway was one of the factors in the development. Upon the completion of the first transcontinental railway in 1888, Montreal became the center of the Canadian railway network, whose main lines terminated at locations close to old Montreal. Near Bonaventure, Windsor and Viger stations, several hotels developed, quickly joined by related activities."

"But the creation of public squares contributed even more to the development of the city. Thus in 1892, Henry Morgan & Co., a major department store, which had been established on St. James Street

Atherton, op. cit. Vol. II. p. 8-9.

since 1840 moved to a new location across from Philip Square, this move was soon followed by another major store, Henry Birks & Sons in 1894. It should be noted at that time St. Catherine was one of the fashionable residential streets of that era."

"From then on, retail business gradually evacuated the narrow streets of the old city to invade St. Catherine Street, driving out the residents. About 1919, the transformation of this artery was an accomplished fact with a strong concentration of commercial establishments around Dominion and Philip Square."<sup>111</sup> After the turn of the 20th Century, there was a considerable increase in the area of urbanized land in Montreal. Around Dominion Square, office buildings such as the imposing mass of the Sun Life and the Dominion Square Buildings added to the significance and colour of Dominion Square.

After World War II there was a very rapid increase. In 1945, W.P. Percival<sup>112</sup> described"Montreal as having everything that every large city had, such as stately buildings, good hotels and stores, well paved streets, a satisfactory water supply, courteous police, theatres, nightclubs, poverty and riches, ignorance and culture, misery and happiness. Montreal has a personality all of its own, a personality born of courage, strength and vision."

The commercial district includes retail offices and other economical functions. It starts in the predominately retail area from

112 Percival, op. cit. p. 17.

<sup>&</sup>quot;Center Ville" Bulletin Technique No. 3, août 1964, p. 10.

Guy Street along St. Catherine towards Philip Square, in which the main department stores are concentrated. The focal point of this shopping district is the Philip Square and Christ Church Cathedral area. The Cathedral is an exquisite example of fourteenth century Gothic style built of Montreal limestone.

Between University and Bleury Street, the commercial district turns south, changing in character from shopping into office district. Going down to St. James Street is the office district which will be replaced by the financial district. Starting point is the Royal Bank Building, the largest of the skyscrapers in downtown Montreal. Montreal and Canadian Stock Exchange and Bank of Montreal reaching St. Lawrence Street. The serene atmosphere of the financial district is replaced by busy retail and service activities of St. Lawrence Street.<sup>113</sup>

In the early 1950's, it was already noticeable the conquest of the city by motor car. "In 1945, on an average day, 200,000 vehicles entered or left the core. About 41 percent came and went from the north, 6 percent from the south, 28 percent from the east and 25 percent from the west. By 1954, over 300,000 vehicles entered or left the core in a single day, and the number of vehicles to and from the north increased by more than half as much again."114

At present, the retail district extends along St. Catherine up to Brunside between Mountain and Bleury Streets. During the day, it

- 113 Percival, op. cit. p. 86
- 114 Spence-Sales, H. "The Heart of Montreal" p. 13.

is the most active and vibrant part of the city, streets are crowded with motor cars and buses, sidewalks are crowded with pedestrians. Even at night this part is not dead; there are always window shoppers around; the other pedestrians are using the street on their way to the entertainment section of the city. This part is peculiar to Montreal alone; the atmosphere is city like and cosmopolitan. The area around Philip Square is a curious mixture of open space, activity, and the sudden appearance of anecclesiastical building, Christ Church Cathedral. From Philip Square to Bleury, St. Catherine Street is French Canadian in character; this atmosphere is stressed more and more as one moves toward the east. Curiously enough, this feverish expansion of St. Catherine Street has acquired practically more of the new edifices; except face lifting along this street. Philip Square area is still the focal point of this retail district.<sup>115</sup>

"Office district is the dominating portion of the central area. It starts at Guy and Dorchester Streets, moves along Dorchester to Bleury, turns south and stretches along St. James Street to St. Lawrence. The main hub and focal point of the district is the group of three office buildings along Dorchester; The Canadian Imperial Bank of Commerce Building, The Royal Bank of Canada, (Place Ville Marie) and C.I.L. House. The C.I.B.C. building is remarkably slender in its proportions, a high rise office tower. It leaves a simple tower-like effect. In contrast to it, next to the Sun Life Building stands the

115 Virak, op. cit. p. 171.
Place Ville Marie cruciform building; a heavy dominating bulk of the area, monumental and powerful. C.I.L. House is the classical expression of a high rise slab, very competently executed."<sup>116</sup>

These three towers are the symbols and the node of the "upper" office district area, their physical characteristics radiating their image. The visual scope of the office district extends down to St. James Street area by a long vista of Beaver Hall Hill until Victoria Square. To the collection of buildings of various periods around Philip Square another one has been added; The Bank of Montreal, next to the old one. The first Stock Exchange Tower in Place Victoria, just completed two months ago, stands majestically at the west side of Victoria Square. The rest of St. James Street is quite unchanged, preserving its typically international character of a financial street anywhere around the world. The unity of St. James Street is a result of a self consistent organization of elements achieved during the course of history. (Figure 67).

The skyline of Montreal is unrecognizable in comparison to the 1950's. These new super high rise office and complex buildings have erected a new image of downtown and Montreal itself. There could be even some question of their competition with Mount Royal. These buildings have increased the pulse of the central area concerning economic activity, pedestrian and vehicular traffic. Dorchester Boulevard between Peel Street and University Street has become a "Grande Alee" of a 20th Century metropolis.

116 Virak, <u>op. cit</u>. p. 174.

. .



In the 20th Century, Montreal experienced an extraordinary growth. From the 100,000 inhabitants of 1917, the population rose of over 1,000,000 by 1941 and today the population of metropolitan Montreal is near the two million mark. It is the largest city in Canada, occupying 52 square miles of territory. The city has become a center for the manufacturing industry, while its order role of chief port has been maintained and increased with the opening of the seaway in 1959. The growth caused by industrialization had a profound effect upon the morphology of Montreal.

The annual output of goods and services through 35,000 establishments of all kinds is currently at 8 million. Several factors, such as steady growth in population proximity to the other fast expanding areas, a flexible labour market of great magnitude, good transportation facilities and abundant hydro electric power at low cost have combined to attract hew industrial establishments to the Montreal area.<sup>117</sup>

The retail trade moved from the old heart of the city which centered on St. James and Notre Dame Streets, and its place was taken by financial corporations and the legal profession. "The land within the boundaries of the city has been built upon and the towns around it have known a continuous spread. In the last twenty years the urbanized land has increased in area threefold."<sup>118</sup> Tentacles of development

- 117 Virak, op. cit. p. 150.
- 118 Spence-Sales, op. cit. p. 9.

stretch out beyond the island. In the suburbs, shopping centers have sprung up and only a small percentage of population come downtown regularly.

The economic prosperity of the postwar years further affected the central areas of the city. The ancient parts could not contain all the financial institutions needed by the metropolis and a new business and commercial center emerged on the scarfment. Some of the complex projects undertaken have affected existing squares, others have created new forms of open space. It is significant that the value of land around Dominion Square is extremely high, costing between \$75 and \$125 per square foot, and yet pedestrian plazas of the new complex buildings have emerged.<sup>119</sup>

At the present time, the City of Montreal is engaged in a vast urban renewal program which will change the physical structure of the city. In the area of public works, physical reshaping of the bursting downtown are, the replacement of blighted sectors and slums by contemporary dwellings represent the first phase of a long term development, expressway and viaducts. The recently started subway will tremendously improve mass transportation.<sup>120</sup>

There is an amount of traffic improvement which is or will be progressing by the Municipal Government. They are illustrated as follows: "The recent traffic improvement in the heart of the city is

Hoffmann, op. cit. p. 120.

<sup>120</sup> City of Montreal, "Montreal" p. 1.

the widening of Dorchester from Delormier to Guy, University south of Dorchester, and the opening of McGregor east of Simpson. The first two are listed among the essential projects in the traffic survey of 1945. They are shown in red. The remaining essential projects are the proposed widenings of Sherbrooke between St. Denis and University, McGill College from Sherbrooke to Cathcart, and Vitre along its whole length. To these are added the extensions of Burnside from Stanley to Guy, Berri north of Sherbrooke, and the continuation of McGregor eastward. They are shown in blue. An east-west expressway, south of the heart is shown in yellow. It was proposed in 1946 as extending from Place Royale to Berri, but it was amplified in 1948 to serve the entire harbour and to be part of a trans-island route.<sup>121</sup> (Figure 68)

Off-street parking facilities is among the pressing problems tackled at the municipal level. A real-estate boom of unprecedented magnitive is backing the above projects as they provide new sources of revenue.

It will solve a lot of crowded traffic problems in the downtown area, and therefore encourage people to come for business and shopping. Furthermore, it also involved a large investment for the complex commercial development and must be increased during the next few years in the downtown area of Montreal.

Since the beginning of the 20th Century there has been a great increase in the population of Montreal. Accompanying this

121 Spence-Sales, op. cit. p. 17.





Fig. 68 DOWNTOWN MONTREAL Traffic Improvement From 1945 explosion was the surge of building expansions, both for commercial and housing. From 1945 onwards, economic prospertiy followed. New super structures, shopping centers and civic centers were planned and built. In every big city urbanization and redevelopment plans were made. This led to the appearance of complex commercial projects for Montreal.

The financial and commercial districts have relocated or expanded as necessary to cope with this growth of business activity. Within the central area there has been an improvement in the traffic conditions, by the introduction of off-street parking, basement garages, widening of streets, and the future completion of Metro and the Trans-Island Expressway will add to the progress.

#### Analysis of Three Complex Commercial Projects

Three of the most significant complex commercial developments in Metropolitan Montreal are Place Ville Marie, Place Victoria and Westmount Center. The first two are located in the downtown area and the latter in Westmount. Beside the other projects, they are the most modern and complicated three, each having their own value in the aspects of both planning and architectural design for the benefit of the whole Metropolitan area.

Ville Marie and Westmount have their self garden setting of sunken plazas, while Victoria shares the open air of Victoria Square in order to offer a magnificant view of the surrounding city. Ville Marie features institutional type of complex and Victoria forms in financial source. Westmount will combine more functional elements of apartment besides office, retail and parking facilities in the former two.

Ville Marie is the earliest and largest project with more floor space and less density at the present time. In addition, Westmount will be comparative little less in density and far smaller in floor space. With the completion of the two towers of Victoria, floor space and density will be the largest.

These three projects are also located at the focus points of commercial districts in Metropolitan Montreal. In particular, the expansion of the twenty-two acres C.N.R. track starting from Ville Marie to Bonaventure with the connection of Victoria and the surrounding future developments by 1967, the core of new city will have covered more than forty acres and will still be growing.<sup>112</sup> While Westmount, with the assistance of Atwater Center will also give the district a sub core.

Because the increase of complex commercial projects, and especially these three, invigorated urban life will strengthen the economic base in Metropolitan Montreal. At the same time, these three are also compact from the functional elements to the modern standards of today's complex commercial projects. It might be realized that they are models of commercial enterprises in present and the near future. These elements in different scales have already been demonstrated. Furthermore, the same principles will be perceeded in the two new projects in the core - Place du Canada, Canadian Pacific Railway \$33 million hotel office building on Windsor Street designed by Architects John B. and C. Parkin. The La Tour Laurier, designed by Architects Craig, Zeidler and Strong is a \$20 million complex, with round tower on Sherbrooke Street.

The analysis in various observation of three projects are as follows:

# 1. Plaza (Figure 69)



## Place Ville Marie

Pedestrian use in broad expanse, open plaza with four sunken courtyards. Main entrances opening onto plaza practically at street level on three sides.

# Place Victoria

Mezzanine section of three floors open on street level with site area. The adjoining Victoria Square with open air on west side.



Scale 1" = 200'

#### Westmount Center

Ample open area for pedestrian circulation, Each building surrounded by walkways and garden areas at plaza level in low coverage. Sidewalk level pedestrian entrances from both east and west sides.





#### Place Ville Marie

Cruciform skyscraper with spacious floor area. Rectangular floor, elevators at the cove of the building to allow wide corridors to unite each floor into an efficient whole.

### Place Victoria

Considerable interest in high concrete structural design. Four exposed columns at the corner of each tower. The core columns connecting together into concrete X frames to locate the transit and service facilities.

## ··· Westmount Center

Both apartment and office in ordinary size and height. Transit and service facilities in central cove.





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# 3. Shopping & Parking Floors (Figure 71)





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Scale 1" = 200'

# Place Ville Marie

Monumental shopping area with direct access in north side and at the four open wells of the plaza level. Bustling promenade to serve the through passing to and from at the center of Montreal.

Two levels of parking floors with a car ramp at north and a driveway for six trailer trucks on south side.

#### Place Victoria

Two levels of shopping arcade covering site area with connection to subway station. A new kind of shopping precinct in Montreal Financial District.

Car circulation to the parking levels

by four car ramps in both south and north sides.

#### Westmount Center

A shopping concourse with entrance in southern street sidewalk level. Two storey department above the plaza occupy smaller space accessible by the lower concourse. Modern shopping facilities over the. sub-center with luxurious merchandise.

Two car ramps on southern and northern streets linking down to the three basement parking levels. A truck delivery space available on south side.

the Shopping Parking

# 4. Content Analysis

# TABLE X

# CONTENT OF THREE COMPLEX COMMERCIAL PROJECTS

	F	lace Vill Sq. F	e Marie t.	Victoria S Sq. Ft	quare	Westmount Sq. F	Center 't.
Footage of Major Facilities	1)	loyal Bank	Bldg.)				
(1) Per Floor	Office	40,000	(41) (2.7)	(2) 23,000 150,000	(39) ( 4)	10,300	(18)
	Stock Exchange Hall	-		150,000			
and the second sec	Apartment	-	3	-		(2) 14,000	(21)
	Shopping	330,000	(1.1)	150,000	(2)	150,000 25,000	( 2)
	Parking	350,000	(2)	150,000	(2)	150,000	(3)
	Mechanical & Service	40,000	(3)	(2) 23,000	( 3)	10,300	(2)
	Observation Tower	6,000		4,000	(2)	-	
(2) Total Floors	Office	1,880,000	(60.5%)	2,394,000	(73%)	185,400	(12.5%)
<ul> <li>(with Fercentage)</li> </ul>	Stock Exchange Hall	-		150,000	(4.5%)	-	
	Apartment	-		-		588,000	(40%)
	Shopping	370,000	(12%)	300,000	( 9%)	200,000	(14.5%)
	Parking	700,000	(23%)	300,000	( 9%)	450,000	(31.5%)
	Mechanical Service	120,000	( 1%)	138,000	( h%)	20,600	(1.5%)
	Observation Tower	6,000	(0.5%)	8,000	(0.5%)	-	
Total Floor Area		3,070,000		3,280,000		1,444,000	
Site Area		330,000		150,000		150,000	
Height		585	Ft.	624	Ft.	250	Ft. (Off.) Ft. (Apt.)
Coverage		50%		100%		42%	
F.S.I.		8.9	(Incl.I.B.M.	e 17.5		5.5	
Miscellanoues	Apartment Unit	- 1	Imperial Oil)	-		320	
	Parking Space (Car)	2,000		1,500		1,300	
	Elevator	32		لمله		12	
	Cost (Million Dollars)	105		90		20	

#### Conclusion

The Central Area contains many frictions and paradozes. Because it was the place of first settlement, it contains some of the community's oldest structures, including both beautiful historical buildings as well as inferior and deteriorated ones. Besides being the place of greatest building, height and density, it is also the place of greatest economic activity, therefore it contains some spectacular new buildings. The street layout is old, and the streets and sidewalks are likely to be amongst the narrowest in the city. Characters of old towns had to be changed radically with a view to incorporate modern facilities necessary for modern functions. Effort is being executed to provide better living environments in crowded central areas by vertical expansion, while retaining existing population densities. But the Central Area, with its specialized services, acts like a magnet attracting swarms of people who congest its narrow streets. It gives the metropolis an identity. It is the heart and image of the city.

The problem of access to Central Area is certainly the one most widely recognized and complained of. Yet the traffic problem may be insoluble; if more highways and off-street parking space are provided, more persons may choose to drive downtown, thus maintaining congestion at its previous level.

An outstanding characteristic of the new Complex Commercial Project is the open quality of the site. The developers have sought

prestige rather than routine investment. Amenities enhance the working environment; the buildings are invariably air-conditioned; they have parking garages, roof gardens, an open plaza, plants, recreation for employees and they offer a magnificant view of the surrounding city.

From my observations of the illustrations used in this thesis, I have come to the conclusion that the majority of the Complex Commercial Projects are restricted to the development of only a small portion of the Central Area and the developers usually press their self-centered interests. Therefore, I suggest that there should be greater co-operation between the developers and government for the benefit of the whole city.

The present Projects are mostly limited in scope of solving the traffic congestion in its vicinity. The "traffic problem" of Central Area is not merely one of access from outside. Comfort, convenience, and safety should be provided for both pedestrian and vehicles movement within the Central Area.

It is now possible that in the near future, a Super Complex Commercial development might occur through the co-ordinated efforts of privated enterprises and government. The site of this Complex should be in the Central Area covering an area of approximately  $\frac{1}{4}$  mile radius or walking distance of within five minutes.

The whole Complex would be surrounded by a ring-road connecting an expressway so that the Complex would be traffic-free which would give the pedestrian unrestricted movement. Moving sidewalk and the electric shuttle bus may connect pedestrian areas to parking lot or

transit facilities, or operate within certain kinds of pedestrian ways where distances are great. Underground and multiple-storeyed garages to take care of the parking should be made available on the periphery of shopping areas and buildings.

The Super Complex Commercial project would contain as many important functions of the city as possible which should include Government Administrative offices, office buildings, banks, hotels, theatres, apartments, professional center, trade exhibition halls, department stores, super-market, shopping malls, and transportation buildings where the railway, subway and bus terminuses are located on separate levels. Buildings and churches of historical value should be retained.

The shopping mall and garages which would cover several levels of the site area, could be above or below the plaza. The buildings and the plaza could be on different levels with steps leading up to them in order to create a better impact on the visitor. There should be continuous pedestrian movement through all the different levels linked either by escalators or elevators. On the plaza there would be a big fountain, surrounded by plants and benches, trade is often improved where pedestrian ways give people a chance to stroll or sit in an attractive setting.

The office building, in the Complex, designed in large area per floor would cater mostly to the offices of big corporations, giving them sufficient room for expansion; and the shopping areas offer mostly

luxurious goods and first-class services. The facilities offered by the Complex and the other areas of downtown would combine to serve the whole metropolis better.

The government's offer of direct inducements to the developers through tax and other means to compensate for extra land costs or building costs incurred for no other reason than to improve the appearance of the building or the amenities of the neighbourhood, will greatly help to have more beautiful buildings, landscape and facilities which will benefit the whole city.

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