HIGH DENSITY URBAN ENVIRONMENT

A Thesis Submitted In Partial Fulfillment of the
Requirements for the Degree of Master of Architecture.

Massachusetts Institute of Technology June 1967

Josef Tomas Brozek
Ing. Arch. - Institute of Technology Prag, Czechoslovakia
Ceske vysoke uceni technicke, Fakulta architektury 1962

Author

Thesis Supervisor

Lawrence B. Anderson, Dean
School of Architecture and Planning
Dear Dean Anderson:

This thesis, "High Density Urban Environment", is submitted as partial fulfillment of the requirements for the Degree of Master of Architecture.

Respectfully,

Josef Tomas Brozek
<table>
<thead>
<tr>
<th>chapter</th>
<th>title</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>ORGANIZATION OF THE PROJECT</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>DEFINITION OF THE PROBLEM</td>
<td>5</td>
</tr>
<tr>
<td>IV</td>
<td>PHILOSOPHY OF THE DESIGN</td>
<td>7</td>
</tr>
<tr>
<td>V</td>
<td>DEFINITION OF URBAN COMPONENTS</td>
<td>9</td>
</tr>
<tr>
<td>VI</td>
<td>CHARACTER AND CATEGORIES OF ACTIVITIES</td>
<td>11</td>
</tr>
<tr>
<td>VII</td>
<td>DENSITY OF POPULATION</td>
<td>14</td>
</tr>
<tr>
<td>VIII</td>
<td>GROWTH PATTERNS</td>
<td>16</td>
</tr>
<tr>
<td>IX</td>
<td>MOVEMENT SYSTEMS</td>
<td>18</td>
</tr>
<tr>
<td>X</td>
<td>QUALITIES AND CHARACTER OF VARIOUS LEVELS</td>
<td>20</td>
</tr>
<tr>
<td>XI</td>
<td>HOUSING CATEGORIES AND VOLUMES</td>
<td>22</td>
</tr>
<tr>
<td>XII</td>
<td>STRUCTURAL SYSTEM</td>
<td>24</td>
</tr>
<tr>
<td>XIII</td>
<td>LIFE PATTERNS WITHIN THE SYSTEM</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>BIBLIOGRAPHY</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>PHOTOGRAPHS</td>
<td>30</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

The present structure of most American cities is no longer satisfactory in terms of distribution of activities, transportation, city spaces, etc. The problem is not local or continental, but is recognizable world wide, especially in highly dense metropolitan areas.

The existing system of STREET - URBAN BLOCK is becoming obsolete because of its limited ability to adapt to or provide a framework for solutions to the increasing problems caused by the rapid growth of population and the developing technology which offers an unlimited number of new inventions and increases demand. The development characteristics of the twentieth century, the need for a higher degree of flexibility and the economic system of the market result in the speed in which man has to make decisions and build his environment. When the limitations of the existing system were recognized and defined, search for new solutions started. The results are coming, covering a wide range with utopistic "neo-City Beautiful" on the one side and artificial, fully automated, controlled and computed nightmares on the other. From whatever was found, several statements became the major rules.

First, any design of a well-functioning, flexible, economic and nice looking housing project, traffic interchange or office building can be a contribution to the solving process, but cannot be misunderstood as
being an answer. Second, the system is characterized by its complexity. This means that any search for the NEW SYSTEM has to be complex and investigate all the basic factors of activities, transportation, city spaces, social, political and economic as well as their interaction. Third, according to the character of the problem, separation of one element for its investigation and research is necessary but without losing the relation with major criteria.

The project and thesis were concerned not only with the problem itself (a high density urban environment) but also with its organization structuring and strategy, the points where general is confronted with specific, abstract with concrete and with criteria for its physical result. Through the project and thesis I tried to formulate my personal feelings and statements of what the urban environment and relation between its major elements should be according to the general public as well as the specific individual needs.
CHAPTER II

ORGANIZATION OF THE PROJECT

The project was divided into two stages:

STAGE ONE - Analysis of the concrete problems of corridor city Germantown.

The result is summarised as a set of components and their definition.

The tendency was to solve from specific problems to general statements.

1. Definition of the corridor city and its relation with the region.
2. Character and distribution of activities.
3. Definition of growth pattern and staging.
4. Character and relations of the movement systems.
5. Definition of open space sequence.
6. Primary and secondary city cores and the distribution of activities along the tertiary branches.
7. Definition of activity level and its urban character.
8. Definition of ground level and its rural character.

STAGE TWO - Testing the general components and statements on the specific site and defining the measurable concrete relations and their physical and formal solutions. For this purpose was selected one of the local cores and its density was set at approximately 300 people per acre. The area in consideration - approximately 50 acres - will be a neighborhood of 15,000 people. The program in terms of basic needs for 15,000 people, character of the activities, their relations and physical sizes is part of the project and is presented as a part of the oral and final graphic presentation.

-3-
Research, hypotheses, statements and solutions in both stages are organised and presented under specific topics. The study of stage two was directed from general components to specific statements.
"...The project is the design of a satellite town for Washington, D.C. The town is Germantown in Maryland for the ultimate population 85,000 by the year 2000. The Maryland National Capital Park and Planning Commission published in April, 1966 a Preliminary Master Plan for Germantown. You will base your design on this plan as far as the location, size of the town and socio-economic framework....."

The class program for fall and spring term 1966/1967.

For the understanding of how and why the project came to the present point and which were the determining elements, I feel the necessity to define the initial hypotheses and those which were formulated during the work on the problem.

CITY - A city of the twentieth century is an area where relatively large numbers of people live, work, study, love and produce good as well as evil, geniality as well as stupidity, within an organized framework that takes into consideration all factors of sociology, economics, politics and physical design.

CHARACTER - is a result of the impression of the city, its natural conditions, landscape, population, its number, characteristics, socio-economic structure, cultural and historical conditions, architecture. Character is the mood of the city, the flavor which differentiates one city from another.
FUNCTION - Is the moderator of the city, causing its prosperity or destroying it. Function is not a permanent phenomenon, but changing and flexible. Through its function, the city is related to the county, state and federation.

THE FUNCTION OF "GERMANTOWN 85,000"

Washington, D.C. is rapidly growing. Up to a certain point such growth is vital, useful and reasonable. But suddenly the city is too big and its edges and suburbs are chaotic, undefined, with problematic relations between them, within them and with the original city and its downtown. Instead of proceeding with such type of growth it is better to establish a new city, with clear definition, orientation and relation to the primary city. Relation of DOWNTOWN to DOWNTOWN rather than DOWNTOWN to SUBURB to EDGE....Such a new city is called Corridor city when tied with the primary center by a strong transportation corridor. The initial statements on the function of this corridor city are:

1. Germantown is a corridor city, not a suburb of Washington.
2. It is related to Washington and the other corridor cities by its downtown, not by its edge.
3. Germantown has its internal transportation system which is integrated with the rapid transit station.
4. Corridor cities and Washington relate through their specific functions.

The socio-economic character of the population and the character and physical size of activities were taken from a program issued by Professor Lubicz-Nycz.

The criteria and design goals were presented and submitted in written form on October, 1966. They were summarised by Mr. D. Hudson and presented as an AGGLOMERATION OF OBJECTIVES AND DESIGN CRITERIA.
CHAPTER IV

PHILOSOPHY OF THE DESIGN

The city is a complex body and a product of high participation of all involved in its apparent form. The architect's effort and contribution should be directed towards designing a flexible and open ended system which will be the framework of general participation. A design in itself cannot make a city good and alive, but the designer should prepare conditions so that vital forces are not broken apart or deformed by dead ends, regimented solutions and rigid patterns.

High density urban environment in this project is not considered to be the best or the only solution. Using Germantown as a vehicle for studying high density, I looked at the problems in the area of their highest concentration.

Design goals and criteria are generally defined very vaguely: The city should be pleasant, beautiful, efficient, well oriented, etc. But unless the criteria are translated to the physical and measurable relations they remain abstract terms. I was interested in the transformation of criteria into real form; that is, their expression through the design. When the theory got to a dead end and positive process could not bring results, I reversed the procedure and used a negative approach, trying to design the city as unpleasant, inefficient and miserable as possible. The reverse direction often revealed forces and facts which were hidden or unclear but if overlooked could cause serious problems.
It is typical for young generations to be enthusiastic and ready for new inventions and discoveries. This way qualities which are deposited in history of man and architecture are often underestimated or forgotten. To avoid this, I tried to analyze historical examples and looked for those which have qualities and potential to be carried further and which should be part of a new concept. Old European cities, Italian hill towns or Beacon Hill belong to this category. Even if they could not adjust to the new demand, they still keep charming spirit and very pleasant environment.

Progress leads forward, but this does not mean that everything new is better. The architects sometime tend to be surprised by a brand new idea or an exciting form. It takes decades and effort of many architects and many designs before steps forward start to make sense and create new systems. An artificial flower cannot ever replace the qualities and joy of a real one and a computed, automated and artificial environment is questionable when compared with grass or a single tree.

The project is, therefore, an attempt to outline the basic relationships between the major design components of the system of this corridor city. The nature of these components and their relationships are discussed in the following chapters.
CHAPTER V

DEFINITION OF URBAN COMPONENTS

URBAN COMPONENTS - are elements creating the structure of a city. Their relations and ability to respond to the changing demand are predetermining factors for any urban system.

The urban components of existing STREET - URBAN BLOCK system are well known and defined. For better communication and understanding of the new listed components the existing STREET in the urban sense can be expressed as: a linear channel of movement (pedestrians as well as mechanical transportation) where people mix with activities, supplies, parking vehicles and from which the dwellings are accessible.

This definition as well as the definitions of the new components is far from being complete. The primary purpose, however, is to establish the basic vocabulary for discussing the nature of the elements which should be flexible as well as their relationships. The components are defined for this specific project and will be further explained in relation to the specific disciplines.

PRIMARY CITY CORE - is the nodal point of the city where most of the regional and primary city activities are concentrated. It has linear character but through its branches the activities are distributed on the cross axes.

SECONDARY LOCAL CORE - is the nodal point of a district where the basic activities are concentrated. Some primary city activities might appear here also to orient and differentiate one local core from
another and reinforce the relation between primary city core and secondary local core as well as interrelation between local cores.

TERTIARY BRANCH - is the distributor of activities from the cores, which are mostly residential. The branches are connected with the cores and between themselves by the secondary elevated transportation, not by the ground transportation.

PRIMARY GROUND TRANSPORTATION - has a long distance character and connects cities and city cores.

TRANSPORTATION LOOP - is a flexible traffic channel for vehicles only, designed so that it can be used by existing man operated vehicles. In the future, it can be converted into a fully automated and computed system without major changes.

SECONDARY ELEVATED TRANSPORTATION - provides local transportation and serves as a connector between all points of interest within the city. In this case, it has a character of monorail reinforcing the elevated pedestrian activity level.

SEQUENCE OF GREEN OPEN SPACES. Instead of using vegetation as a filling or accidental oasis, the ground level is treated as a sequence of green spaces through which it is possible to walk without interference of vehicular transportation.
CHAPTER VI

CHARACTER AND CATEGORIES OF ACTIVITIES

REGIONAL CHARACTER - activities which are common to the region and have to be easily accessible by the regional transportation network, such as regional shopping center.

CITY CHARACTER - activities which are common to the whole city and have to be accessible from any part of it, such as administrative offices, college, museum, etc.

LOCAL CHARACTER - activities which are common to the district or neighborhood, such as local shopping center, drugstores, elementary schools, etc.

In terms of commercial activities, the DEMAND has regional and city character when character of IMPULSE is rather local.

The complex of activities, their relations, arrangement and integration is one of the major city's elements. Any truly three dimensional system cannot be achieved without distributing activities in three dimensions. Only under those conditions the three dimensional transportation system can be developed and serve efficiently. Another rule is to mix the activities and create a balanced system where relations are not cut but where one activity takes full advantage from coexistence with others, as opposed to the typical example of zoning and separation of commercial areas from housing.

For reference the spatial coordinates have to be established. The two horizontal dimensions will be related to the position of the
primary and secondary cores and third, vertical dimension will be related
to the three basic elevations of the system: Lowest ground level,
elevated activity level and upper slab and tower part.

HORIZONTAL DISTRIBUTION OF ACTIVITIES. Instead of wide
horizontal distribution and decentralization of activities which have
to be connected by the road system, activities were relocated toward the
transportation channel and the feeding core was established. The
activities were evaluated and distributed according to their character
and specific needs.

PRIMARY AND SECONDARY CORES - are most accessible part of the
system where activities requiring daily supply or having strongly urban
character are concentrated, e.g. department store.

TERCIARY BRANCH - contains and distributes the activities which
do not have to be tied to the transportation network and which reinforce
the role and character of the branches, e.g., neighborhood grocery.

ISOLATED - are the activities which are more related to nature
at ground level and suggest separation and free positioning without
strong relation to the urban system, e.g. schools, churches or sport
facilities.

VERTICAL DISTRIBUTION OF ACTIVITIES.

The system has three vertical parts as a response to requirements:

LOWER PART - is represented by ground level, has a "rural"
character. Whatever is located within the system on the ground is exposed
to nature, planting, animals and is characterized by leisure walk,
relaxation and playing children.
MIDDLE PART - is represented by an elevated activity level (see Chapter X) and exposed to the activities, secondary elevated transportation and busy urban life. Daily errands, door to door connection and shopping take place there.

UPPER PART - has character of slabs and towers where dwellings are related only to the vertical core. It creates the visual dominance of the system and is exposed to long views. Dwellings which are located there have relatively small interaction between themselves.

The three dimensional system provides enough choice and diversity so that the dweller can choose with which part of the system he would like to associate or which location and character is most suitable for him - Urban, Rural or Isolated.
CHAPTER VII

DENSITY OF POPULATION

People as well as animals live together and there exist many kinds of relations between them. Ecology gives exact data on when and why man or animal living alone are psychologically disturbed and become lonesome or lost. The opposite extreme is the point above which people or animals suffer and feel unpleasant because of their high concentration in a particular area. Under such conditions the relations between them start to be hostile and aggressive and in case of animals they stop their production or start to fight.

The present experience operates with the terminology of two dimensional cities and measuring density by the "people per acre" established vocabulary:

- 20 ppa is luxurious
- 50 ppa is density of suburbs
- 300 ppa is quite high; and
- 1,000 ppa is density of Harlem

The criteria which were used for this design do not relate or stress density as a major factor of the quality of environment. The slum can exist within density even lower than 20 ppa. There is no such data on what is the ideal or best density. To solve this particular project was necessary to analyse what are the advantages and disadvantages of both - high and low densities. To summarize the information:
HIGH DENSITY - offers a diverse environment, people and activities are concentrated in one area, interaction is more probable and the structures and facilities are more economic.

LOW DENSITY - can be characterized by the strong relation to nature, more space for trees, plants and relaxation.

MIDDLE DENSITY - is everything between high and low and advantages with disadvantages are mixed. If Harlem serves as a bad example of very high density the suburbs of Los Angeles cover the opposite part of the range. Everybody wanted his private and cheap part of nature. What was created had nothing to do with a good or natural environment.

To reduce the problems caused by the particular density I tried to work from two sides. On one side with the wish to have very high density and as many of the advantages which it offers and on the other side not to allow the vegetation to be pushed out of the city or be reduced into a crippled oasis.

For the second stage of the project a density of approximately 300 ppa was selected. This was necessary in order to establish a program of needs and requirements related to the ultimate population of 15,000 (50 acres x 300 ppa).
CHAPTER VIII

GROWTH PATTERN

The cities and actually any urban forms were always the subject of change. The change of function, relation with the other cities and changes within their parts. Until the twentieth century the demand was changing relatively slowly and the city was able to respond and somehow adapt to new conditions. The present rapid growth of population and the speed of changing demand call for a high degree of flexibility of all elements, components as well as their functions and relations. Discussing growth it is necessary to have in mind FLEXIBILITY, the ability to adapt in qualitative and quantitative terms with minimum need for change.

GROWTH OF COMPONENTS

CITY CORES AND BRANCHES. Any urban system which wants to be three dimensional has to be flexible in all its dimensions. The overall structural network is designed so that elements can be added to or removed from the system, function changed. To achieve this within a typical area growth occurs by addition to the existing elements, by addition of new elements or by replacement of obsolete functions in the existing cores by new functions according to demand. This type of growth is characteristic of growth patterns for the city as a whole, that is, growth in a fine grain especially within the city itself.

PRIMARY GROUND TRANSPORTATION. The design of interchanges and connections with the feeding cores allows them to create an open ended system where new elements can be added and new connections made.
SECONDARY ELEVATED TRANSPORTATION. Secondary transportation has a local character and is based on a system of interconnected loops. Growth may occur by additional lines on the same loop or new lines encompassing smaller loops.

The primary nodal core is growing and the other components are added. The relation between cores and their different character and functions create a dense, diverse and flexible urban pattern.
CHAPTER IX

MOVEMENT SYSTEMS

MECHANICAL TRANSPORTATION

Existing modes of transportation are well defined and their requirements known. But with the highly developed technology new modes of transportation and new categories will have to be established. When the highway will become automated guided channel, and existing railroad will not need any rails but will be able to run on a concrete bed. When instead of one train with a capacity of 500 people, there will be smaller capsules running according to immediate demand, not by the long period schedule - the new categories and their relation have to be established. For purposes of this project, transportation is divided into two categories:

PRIMARY GROUND TRANSPORTATION - provides long distance as well as core to core connection. It is two dimensional, related to the ground level and with the exception of area under the core, primary transportation is uncovered. Requirements for loading and unloading space, storage of vehicles, turns and full U turns, maintenance and service space. The ratio of private car usage can be reduced primarily to encourage the public transportation and also because of high density and distribution of activities most of the daily necessary errands are within the range of walking distance.

SECONDARY ELEVATED TRANSPORTATION - is the three dimensional monorail loop system providing transportation within the city. When capsules of primary transportation can leave the system and be driven
anywhere - the capsules of secondary system are attached to the network and cannot leave it. The capsules of elevated transportation can stop anywhere within the core area and separated stops on the activity levels. Distance between stops is approximately 350-500 feet, according to density and functional requirements.

PEDESTRIAN ON THE GROUND LEVEL - The ground level has a rural character and primary transportation is limited to its channel. Ground is treated as a sequence of green spaces and leisure pedestrian paths. The pedestrian is mixed with activities within the area of the core which serves as an interchange or element of integration between different levels and their different character.

SERVICE AND MAINTENANCE OF GROUND LEVEL. The ground pedestrian paths are designed so that they can be used by police cars, fire trucks, ambulances, etc. in the case of emergency. Otherwise, it will also be used by public service and maintenance vehicles which will provide such operations as collecting leaves, cutting grass, moving large parts or furniture.

PEDESTRIAN ON THE ACTIVITY LEVEL. The urban character of activity level offers the network of sidewalks and bridges along which the activities are distributed. The pedestrian profiles and conditions will differ according to the different portions of the system (cores or branches) and surrounding activities. Minimum width of branches is 15 feet, maximum 30 feet, maximum in the core is 60 feet.
QUALITIES AND CHARACTER OF VARIOUS LEVELS

After establishing basic criteria:

1. Diversity of environment and mixture of uses and activities to reinforce their vital interaction,

2. Create sequence of green spaces; and

3. Combination of advantages of high density urban environment with qualities of nature related low density rural environment

It was obvious that with existing components and present structure of the city, environment which should correspond with stated criteria, could not be achieved. For example, present urban component STREET existed over centuries as a linear space for pedestrians, vehicles, activities and public affairs offering diverse and pleasant experience. The character of pedestrian space and requirements for vehicular transportation came to the dispute and could not be executed together. Transportation has to be separated into its own channel designed according to speed, capacity, etc.

Urban and rural environments exist as separated and functionally different phenomena. To combine their qualities on the same area means to integrate them on the same level or to separate them and create several levels having different character. To separate the rural qualities and relation to nature from the ground level was impossible and when the activities and urban qualities were also executed on the ground, it became crossed and most of the rural qualities were gone.
The decision was made and ground level is treated as a sequence of green spaces having RURAL CHARACTER. The network of pedestrian paths will serve for relaxation and leisure walks and in combination with playgrounds, benches and intense planting will offer qualities which are in the present cities restricted to the public parks.

Activities are elevated and concentrated around ACTIVITY LEVEL which is designed as an urban pedestrian deck, reinforced by secondary elevated transportation.

Urban activity level and rural ground level are visually connected. When physical connection is provided by batteries of elevators and escalators. The integration of two different levels is limited to the area of cores and is provided through the activities.
The second stage of the project consists of physical design of one of the secondary cores with its tertiary branches. Since the residential activity represents the majority it will be discussed more in detail.

The area of approximately 50 acres was selected and with density of 300 ppa represents the population of 15,000 inhabitants.

The full range of housing diversity is achieved by variety of dwelling volumes and their distribution within the system.

**DWELLING VOLUMES:**

<table>
<thead>
<tr>
<th>Size</th>
<th>No. of Inhabitants</th>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/30</td>
<td>1</td>
<td>450 sq.ft.</td>
<td>20%</td>
</tr>
<tr>
<td>20/20</td>
<td>1-1 1/2</td>
<td>600 sq.ft.</td>
<td>10%</td>
</tr>
<tr>
<td>25/30</td>
<td>2</td>
<td>750 sq.ft.</td>
<td>25%</td>
</tr>
<tr>
<td>30/30</td>
<td>2-3</td>
<td>900 sq. ft.</td>
<td>15%</td>
</tr>
<tr>
<td>35/30</td>
<td>3</td>
<td>1050 sq.ft.</td>
<td>10%</td>
</tr>
<tr>
<td>45/30</td>
<td>3 &amp; over</td>
<td>1350 sq.ft.</td>
<td>20%</td>
</tr>
<tr>
<td>60/60</td>
<td>3</td>
<td>1800</td>
<td></td>
</tr>
</tbody>
</table>

Since the dwelling units are flexible as well as their possible interconnection, the proportion of different housing volumes will coherently change with changing demand.
INTEGRATION WITH VARIOUS PARTS OF THE SYSTEM

LOWER PART - dwellings are related to the natural and rural character of ground level.

MIDDLE PART - dwellings are related to the activity level and its urban character.

UPPER PART - dwellings are related to the vertical core and organized as the slabs and towers.

HOUSING CATEGORIES

1. Single family living separately on the ground level.
2. Several families living close together on the ground level.
3. Multi-family organization of dwellings.
4. Single people living separately but small size dwellings mixed with family size dwellings.
5. Single people living separately and small size dwellings concentrated with common services (dormitory-like types).

According to the scale of the project, dwellings as such were not designed but used as volumes. The housing categories were defined but their distribution within the system is not graphically documented.
Design operates with the modules: 30 by 30 feet for residential areas and smaller size activities; 60 by 60 feet for parking structures and large size activities. Transformation from lower 60 feet module to upper 30 foot module is provided by the one way spans approximately 50 feet above the activity level. The similar spans create the structural base of activity level and in both cases the structural height of spans is used for the establishment of mechanical levels.

Dwellings are constructed as hard frame units which are attached to the overall structural system. Lower portion of the system has additional flexible arrangement of columns which gives more freedom in terms of organizing and cantilevering the dwelling units.

Dwellings will be delivered in the parts and lifted up to the elevation of their final position where they will be fitted together.
The role of the final chapter is to discuss results which came as an output of initial hypothesis, design goals and criteria. The basis for judgment and comparison is represented by the present urban structure with its specific problems and general requirements.

The solutions introduced by the design and thesis are evaluated in the relation to specific criteria.

FLEXIBILITY - The functions and activities can grow or be replaced more easily because their envelopes are independent of the overall structural system.

GROWTH - is not one directional and two dimensional, but from the nodal point to the perimeter as well as the opposite direction. The elements can grow according to the demand not to the immediately available building lot.

DIVERSITY - to the diversity of the elements was added the diversity of their three dimensional positioning. Two horizontal coordinates were related to the cores and branches when the third, vertical dimension expresses relation to one of the three available zones (low rural, middle urban, upper isolated). There is also diversity of open spaces as a result of three dimensional system.

CONTINUITY - the physical boundaries (block, street) were replaced and the continuity achieved on two levels. On the activity level to create a sequence of uninterrupted area for activities and on the ground level to create a sequence of uninterrupted green spaces.
LEGIBILITY - the functions and activities were designed in certain relation to the components. Through this relation the activities can be defined and recognized. Wherever the primary ground transportation becomes covered it means you are within the area of a core with large parking structure under and a large concentration of activities above.

ACCESSIBILITY - (Visual) - Functions located on the ground level can be seen from the elevated activity level and in reverse. The system prepares conditions for a long, eye level view. Where something is important you can see it. Where there is an opening through which you can see, there is something important.

ACCESSIBILITY - (Physical) - The functions and activities which have to be accessible were concentrated in the area of the highest degree of accessibility. A department store is located within the area of a core. Every core contains the large parking space to achieve the accessibility by ground transportation, loading and unloading space to achieve requirements of supplying and maintenance, four lanes of elevated transportation provide the possibility for large numbers of capsules being able to stop within the area of the core and each of them wherever it is needed. The high concentration of the population within walking distance offers the easy pedestrian access on ground or activity level.

ACCESSIBILITY - (Social) - The major part of the ground level is public. The certain social groups are not fenced out from the major amenities of the city.

ACCESSIBILITY - (Economic) - The concentration of the population in the certain area with relatively high density per acre create conditions for the possibility to invest, construct and maintain as well as to buy, rent or use.
While designing and working on the project my goal was to create an environment which will offer rich and diverse life patterns. As an inspiration I drew upon images, feelings and knowledge collected during my travels through Europe, and living on Beacon Hill.

JINDRICHUV HRADEC, CZECHOSLOVAKIA - the city with the park which starts in the busiest downtown and gives you a chance to walk under the trees, between the flowers without crossing the roads, parking lots or railroad tracks. The park has only a beginning. The end is undefinable because of overlapping with woods and meadows.

......CONTINUOUS GREEN SPACES......

PARIS - the charming cafes and small shops dispersed along the narrow streets, the possibility to sit on the sidewalk and watch what is going on.

......ACTIVITY LEVELS......

Without cars, gasoline smells and dispersed various shops and offices where you can sit and watch people shopping, drinking coffee or waiting for a girl friend.

......MOUNTAIN CABLE CARS......

...which are great experiences offering the pleasure of a ride and an enjoyable view.

Elevated secondary transportation from which you can see people walking on the activity levels or children playing on the grass of the ground level.

ROOFS OF BEACON HILL - which are covered with sun decks, sun-tanning people and pots with flowers and trees.
TREATMENT OF THE ROOFS.

Within the given time and complexity of the problem it was not possible to cover all issues and respond to all factors. I hope that the information which is available on the drawings and written in the thesis present clearly what my image and feeling are of how the urban structure might be and what it should offer and provide.
BIBLIOGRAPHY


Alexander, Christopher; Forum, "City is not a Tree, May, 1965.

Appleyard, Donald, Kevin Lynch and John R. Myer; The View from the Road, MIT Press, 1964.

Lynch, Kevin; The Image of the City, MIT Press, 1960.


Mumford Lewis; the City in History, N.Y. 1961.


STRUCTURAL SYSTEM

DWELLING UNIT

prefabricated element with self supporting hard frame

FLEXIBLE ARRANGEMENT OF SUPPORTS

RIGID COLUMN LINES
ACCESSIBILITY

GROUND LEVEL

CORRIDOR

VERTICAL CORE

ROOF SURFACE
CHARACTER OF GROUND AND ACTIVITY LEVELS.
DIAGRAM OF RELATIONS AND GROWTH PATTERN

major city core

local core
ENVIRONMENTAL QUALITIES AT VARIOUS LEVELS

vertical core

activity

nature

ground level
MECHANICAL TRANSPORTATION AND ITS INTERCHANGES

vertical transportation

secondary elevated

primary ground transportation
group megaform