

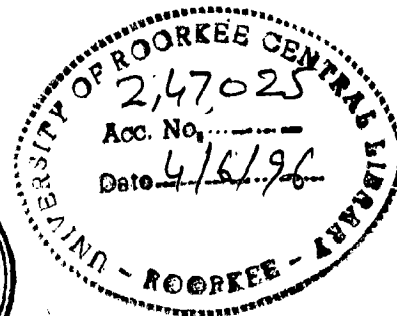
**EVALUATION OF DEVELOPMENT CONTROLS  
WITH FOCUS ON COMMERCIAL DEVELOPMENT  
IN CHANDIGARH**

**A DISSERTATION**

Submitted in partial fulfilment of the  
requirements for the award of the degree  
of  
**MASTER OF URBAN AND RURAL PLANNING**

*By*

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**JANUARY, 1995**

CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled, "EVALUATION OF DEVELOPMENT CONTROLS WITH FOCUS ON COMMERCIAL DEVELOPMENT IN CHANDIGARH", in partial fulfilment of the requirement for the award of degree of MASTER OF URBAN AND RURAL PLANNING submitted in the Department of Architecture and Planning, University of Roorkee, Roorkee is an authentic record of my own work carried out during the period from July 1994 to January 1995 under the supervision of Mr. RAJESH CHANDRA, Department of Architecture and Planning, University of Roorkee, India.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree or diploma.

Dated :  
30 January 1995

*N. K. Chauhan*  
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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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*Nalin Kumar Chauhan*

(NALIN KUMAR CHAUHAN)

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## INTRODUCTION

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## INTRODUCTION

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### 1.1 DEFINITION:

Development control is a tool in the hands of the authority engaged in the profession of planning of the town, in the form of police powers, which along with its various provisions serves to regulate the growth of the city along the desired lines.

### 1.2 PURPOSE OF DEVELOPMENT CONTROL:

Whenever the growth of a settlement takes place nobody can be sure of the total or ultimate form of urban development. Development takes place with the passage of time and is affected by social life, technological changes and economic conditions of the people.

The purpose of development control is to promote the health, safety and general welfare of the community. For this the Government exercise police powers over the citizen's right to property and this police power is in the form of development controls. In the present day context the purpose of development control is

- to give the designer's hand a strength of law.



- to create a system of development so as to realize the form in which the urban development is conceived.

- to utilize the land much more judiciously.

### 1.3 ELEMENTS AFFECTED BY LEGISLATION:

Every thing can be affected by legislation. We can control the whole settlement by controlling the two main things, i.e. the area or the space and the object in that space. In general all the buildings can be classified into two broad categories. Building built by the Government for the public use and the buildings built privately. Private buildings are built to satisfy their own needs and taste. So most of the legislative measures are applied to control these private buildings. It is in the hands of the Town Planner and the Architect, with the help of legislation, to affect the development pattern of the city.

There may be various areas which can be affected by the legislation. For example:

(1) Constructed Volume

(a) Building size and their use

(b) Form, material used

(c) Colour of building

(d) Spatial Setting

(2) Open Spaces

(3) Circulation Channel

(a) Size, right of way

(b) Trees, Hoarding

(4) Other Things

(a) Electric Lines

(c) Drainage

(d) Water Supply

The significance of development controls in our country lies in the fact that during this century, the growth of most of the town and cities has been influenced by the enforcement of municipal enactment, building bylaws and in some cases due to the activities of improvement trusts rather than by the implementation of Master Plans.

**1.4 TYPES OF DEVELOPMENT CONTROL:**

A number of development controls are at the disposal of local agencies. These can be classified as:

**1.4.1 Local area regulation instrument**

-Zoning Regulations

-Subdivision Regulation

-Building Codes

A zoning regulation prescribes how a part of land in a community may be put to use. Following important things

are included in the zonal plan.

---

BASIS OF ZONING	SUBJECT CONCERN
-Use	Residential, business and industrial
-Population density	Housing regulation
-Buildings	Height of buildings, FAR, FSI, usable open spaces etc.

---

Now when the different zones of an area are finalised than a detailed map for each zone or district is prepared within each broad category. Now since these detailed zonal plan are drawn by the local authorities, they are subjected to change which suited to the society.

Once control of large tracts of development are taken care of by zoning regulation, supplementary rules like sub division regulation comes into play to ensure that the standard of development while subdividing large tracts are adhere to. Subdivision regulation further ensures that sub division is as per the master plan. Local services like sewer lines, drainage facilities water lines are in perfect harmony with those already in existance or planned.

Building codes are defined as a series of standards

and specifications designed to establish maximum safeguards in the erection and construction of buildings to protect the human being who live or work in them from fire or other hazards, and to established regulation to further protect the health and safety of public.

Buildings codes are of two types

- National building codes
- Local building bylaws

The National Building code is only a recommendatory document for the adoption in local building bylaws while local building bylaws are used as police powers and these regulations are made by the local authorities. These laws can be different for different cities. So the total number of these codes could be as high as the number of local Governments.

#### 1.4.2 Supplementary Type

It contains

- Urban renewal plans.
- Site design regulation.
- Health and sanitation codes.
- Industrial safety codes.
- Fire code.
- Air pollution code.

- Water pollution code.
- Flood control ordinances etc.

These code are also recommendatory documents.

#### 1.4.3 Local public guide instruments

- Master plan.
- Urban design plan.
- Historical and architectural preservation programme etc.

Master plan gives overall development plan of the city. The planning according to the master plan is different for different cities depending upon their topography, function, requirement etc.

The plan of a city can also be altered under the historical and architectural preservation programme etc.

#### 1.5 MAJOR PROBLEMS OF DEVELOPMENT CONTROL:

In the last few decades, the population of our country has increased dramatically (see table ). It has led to

- Shrinking of floor area per capita.
- Shooting up of floor area ratios.
- Opening up commercial and industrial activities in the residential areas.
- Encroachment of open spaces, circulation etc.

- Growth of unauthorised colonies in the peripheral areas.

Initially there was not much problem for the municipal corporation. But these new developments, such as population pressure, has complicated the issue of development controls. In addition to it the rules and regulation were not changed according to the situation. Also the municipal corporation was unprepared legally, technically and administratively in most of our towns and cities. So the failure of municipal authorities to regulate and control the development can be ascribe to -

(a) The defect in laws and limitation of powers.

(b) Failure to frame bylaws or to revive them to meet the current need.

(c) Limitation of jurisdictions.

(d) Inappropriate procedures and enforcement machinery.

(e) The problem of personnel and technical competence and awareness.

Even if above limitation were overcome, there are other factors such as sheer pressure of growth which have come in the way of enforcement of rules and bylaws. or example Delhi, with its high administrative machinery and technical expertise could not prevent the large scale

unplanned growth of unauthorised colonies. So the problems of development controls are : (1) Existence of multifarious and various legal tools relating to development controls having overlapping jurisdictions and at time inconsistant provisions.

(2) The standards laid down under rules and bylaws are either obsolete and outdated due to the advancement in construction technology and changes in standards and styles of living.

(3)The rules are often based on ideal situation and do not cater to the needs of the lowest income group, which constitute the majority in urban areas.

(4) Existence of dual control by the local body as well as the development authority or the improvement trust in the area falling under the notified scheme, leading to inter organisation conflicts and hardships for the citizen.

(5) The provisions in some of the bylaws, relating to the development control have no relevance to the pattern of indigenious growth in older part of the city where a conglomeration of land use exists

(6) Flagrant violation of rules are a matter of frequent occurance. There is a considerable slackness in enforcement of rules. Unauthorised constructions or the

violation of rules often occurs with connivance of the enforcement staff.

(7) A lot of delay in disposal of building applications which often promotes unauthorised construction and uses.

(8) Non-deduction of unauthorised construction in the initial stage itself and lack of prompt action to nip them in the bud are generally the features of the enforcement machinery which deals with the unauthorised constructions and violation of the rules with characteristic slackness inertia and delays with occasional spurt of drastic action. The enforcement machinery suffers from the inability to eliminate or shift non-conforming industry or to mitigate their environmental nuisance often new unauthorised construction are camouflaged to make them look like new structures.

(9) Interference by the elected representative in the enforcement of rules and regulations against unauthorised construction and colonies.

(10) Indiscriminate issue of court injunctions against prosecutions or demolitions or collection of compound fee do not appear to act as a deterrent to unauthorised constructions and violation of rules.

(11) No consideration is often given to the



asthetic aspects or visual quality of development permitted due to the absence of elevation controls and three dimensional models.

(12) Absence in general of conservation measures for places or buildings of special architectural or historic value and also of restrictive measures of development in the vicinity of historic monument or buildings of special value.

(13) Ineffectiveness of periferal control measures (if any) to control development on lands lying outside the municipal area limits.

(14) Absence in many cities of a decentralised structure of enforcement machinery through creation of zonal offices with delegated powers so as to bring the system closer to the citizen.

(15) Inspection staff in local bodies which constitute the enforcement machinery often are lowely paid and have low technical qualification thus lacking in adequate application of goals of development controls and a sense of purpose.

#### **1.6 PURPOSE OF STUDY:**

The purpose of undertaking the study of development control in the context of Chandigarh was to find the

answer to such questions as:

(1) Were the development control suited to the concept or not?

(2) Were they restrictive or promotive to the process of development?

(3) Were the provision flexible enough to incorporate the changing aspects of growth?

(4) Were the controls have been adhere to in all there provisions or they have been violated?

(5) Have the controls becomes outdated with time to confirm to the process of development?

#### 1.7 OBJECTIVE:

The object of this study is:

(1) To study controls (Types, nature, aspects, characteristic, area of applicability etc.) that have guided the development of Chandigarh with focus on commercial development.

(2) To assess the impect of development controls on the commercial development of the Chandigarh.

(3) To evaluate thereby recommending in terms of:

- Solutions to problems of control and policy guidelines for existing system of development.

- Policy guideline for framing of development controls for future development.

#### 1.8 SCOPE:

The scope of study would comprise in evaluating the development controls specific to commercial areas while giving an overview of all the development controls in Chandigarh. A heierarchy of commercial areas would be established and typical examples would be taken.

## 1.9 METHODOLOGY:

### STUDY DIFFERENT CONTROLS

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#### PHYSICAL DESIGN PARAMETER FOR DEVELOPMENT CONTROLS

- Zoning
- Subdivision  
regulation
- Building bylaws
- Ground coverage
- Height
- Facade character
- Special area control for  
city centre

#### LEGISLATION

- Administration  
policy
- Enforcement  
procedure
- Policies/agencies
- Procedure/action at  
various time phase

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CONCIEVED DEVELOPMENT

ACTUAL DEVELOPMENT

DEVIATION

ANALYSIS

CONCLUSIONS

GUIDELINES

# Chapter-2

## ABOUT CHANDIGARH

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## ABOUT CHANDIGARH

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### 2.1 DEVELOPMENT CONCEPT:

The Le Corbusier's idea of modern town planning based on four direct and concise requirements which are capable of meeting effective dangers which threaten us. According to Le Corbusier

(1) We must decongest the centres of cities in order to provide for the demands of traffic.

(2) We must increase the density of the centres of cities in order to bring about the close contact demanded by business.

(3) We must increase the means whereby traffic can circulate.

(4) We must increase the areas of green and open spaces; this is the only way to ensure the necessary degree of health and peace to enable men to meet the anxieties of work occasioned by the new speed at which business is carried on.

Le Corbusier further produced the concept of "the Three Human Establishments". This was basically an

extension of the physical re-ordering of the internal spatial structures of cities.

Accordingly, these are classified as :

1. The unity of agricultural exploitation.

2. The linear industrial city.

3. The radio-concentric city of exchanges; Here are merchants who distribute goods. Here transactions are made. Here are large schools and Universities. Here, authority has been established when necessary. Place of concentration and diffusion, place of exchange, place of distribution.

This third one is more important to us as Chandigarh is based on this concept.

## 2.2 THE MASTER PLAN:

The basis of Le Corbusier's Master Plan is a grid iron of V3 (fast traffic) roads intersecting at half a mile across and three-quarters of a mile up the plan, enclosing areas known as "sectors". The planned area stretches between two river beds defining its natural boundaries on both sides. It is crowned at the top by the monumental complex of Administrative buildings with no future construction being envisaged beyond the road separating the capital complex from the rest of the town. All future extensions being projected southward. The city centre is

located centrally in the first phase area with an industrial zone to the right and the university on the left. Each sector is divided horizontally by a bazaar street and vertically by bands of open spaces, these forms continues from sector to sector up and across the plan.

The essence of the plan lies in preseving the true functions of seven types of roads called called "The 7V's" by Le Corbusier and their expected operation in relation to the sectors.

- Cross continents : arrive in the town - the V1
- Go to special public services - The V2
- Cross at full speed withoutr interruption, the territory of the town - the V3
- Dispose of immeerate access to daily needs - V4
- Reach the door of his dwelling the V5 and V6
- Send the youth to green areas of each sector where school and sport grounds are located - the V7
- Cycle Tract - V8

### **2.3 LAND: DEVELOPMENT, DISPOSAL & CONTROL**

Initially it was decided that all land within the planned area should be acquired, developed (provided with

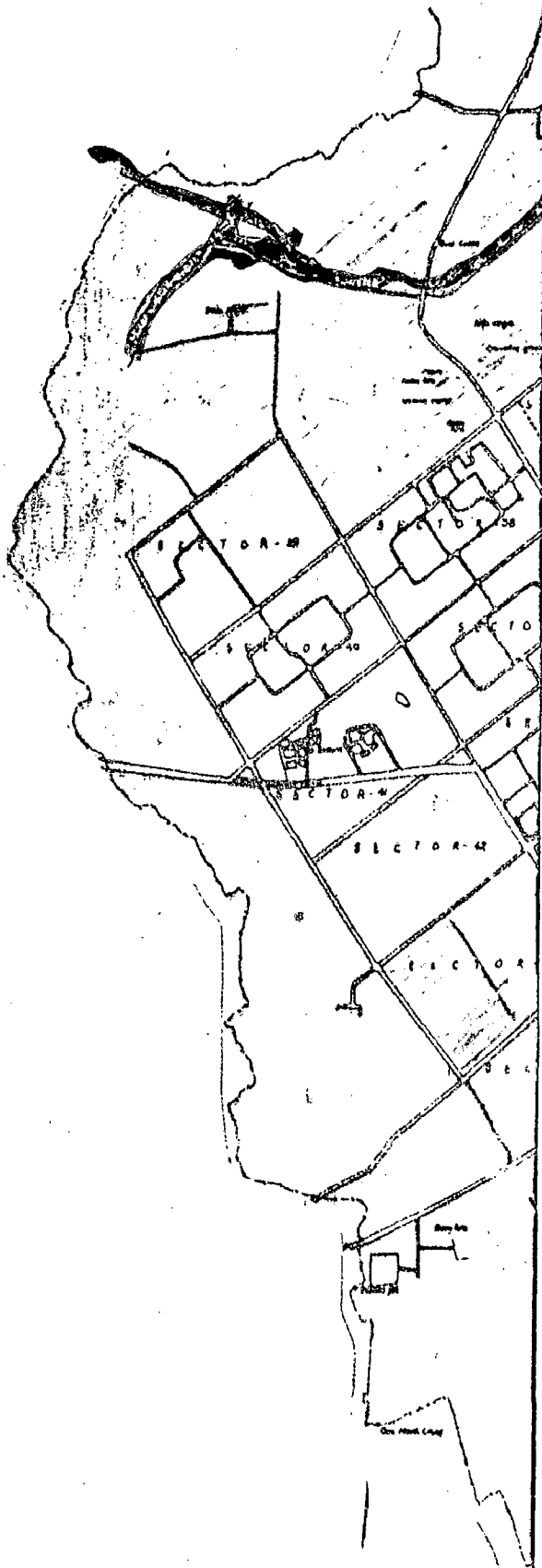


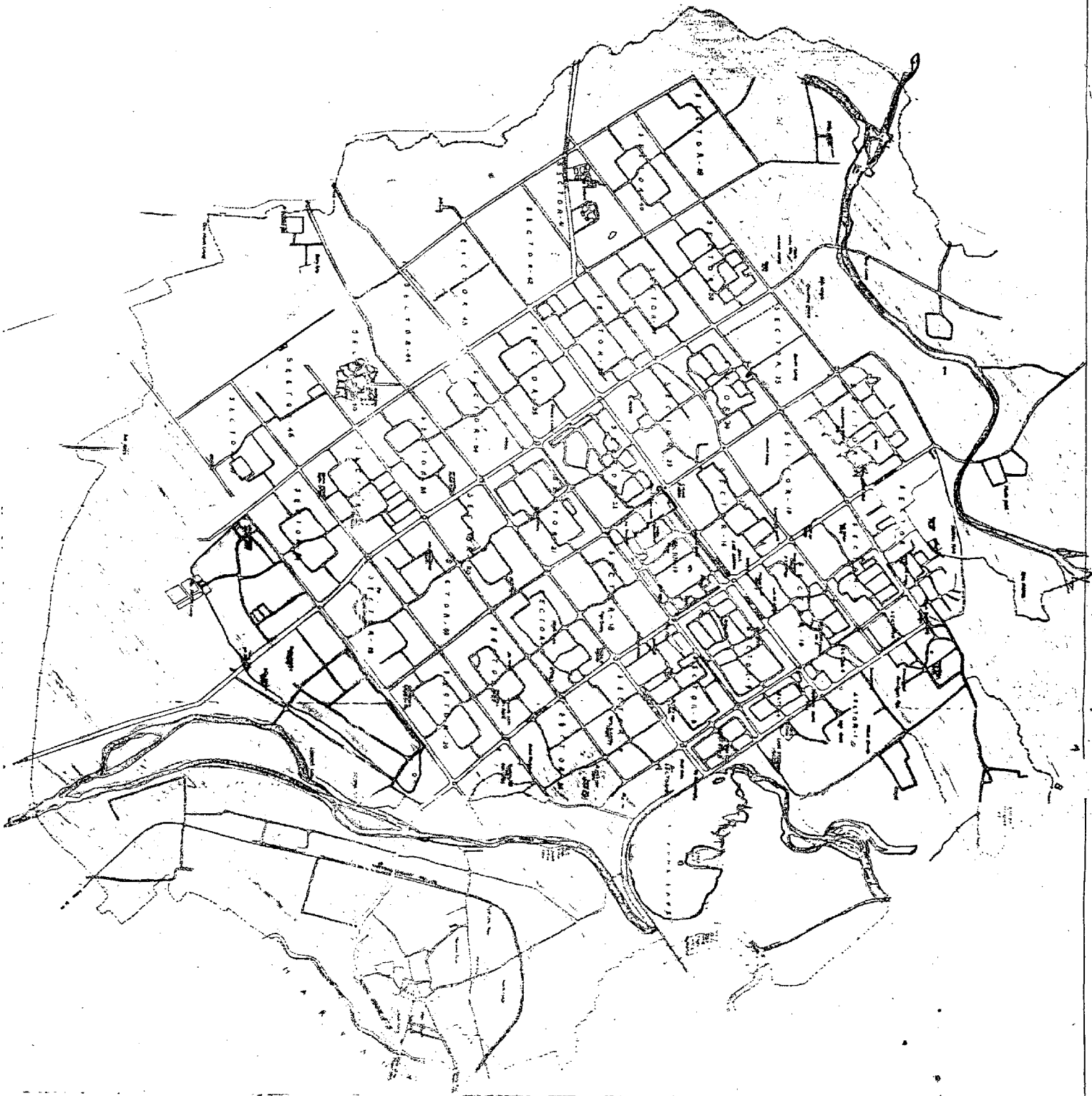
basic infrastructure ) and sold by the government. Private developers was to be restricted to the construction of buildings and infrastructure within the boundaries of individual plots acquired from the Capital Project Organization (CPO). (The CPO was the semi-autonomous development authority created by the Punjab Government to develop and manage the city.)

Chandigarh was one of the first cities in India in which complete land development and disposal control by a public authority was attempted. This decision had two major objective.

The first was apparently, to control and regulate the growth of the city in accordance with the master plan. With in the plan area, in order to control speculative purchase of land, a condition was attached to the sale of all private plots that construction must be completed within three years of the date of purchase. In the case of violation of this condition, the government was given statutory powers to reposses the plot and resell it. At the same time, complete control over land imposed heavy responsibility on the government to anticipate the nature and the scale of the city's growth and to make land available to meet the effective demands of all sections of

# CHANDIGARH URBAN COMPLEX





CHANDIGARH URBAN COMPLEX

population.

The second was concern with the rise in land values as a result of development. Public intervention in the urban market is design to serve two functions: first to modify a situation in which land prices go beyond the reach of large sections of population, and secondly to control unearned incomes from increased land values going to property owners without any benefit to the community. This aspects had a central concern of the authority.

#### 2.4 DEVELOPMENT OF CHANDIGARH:

In the first phase, thirty sector were planned to be developed for a population of 150,000. The 8919 acres of land required for the purpose were acquired by the CPO to start construction. Land for seventeen additional sectors was to be acquired and developed during the second phase to cater for a total population of 500,000.

Between 1961 and 1971, its population increased from 89,000 to 219,000, placing it among 142 class I cities (population exceeding 100,000) in India. During this decade, the rate of growth of its population was 144.9 percent, one of the highest in urban areas in the country. According to the population totals of the 1981 Census, the population grew by another 70.06 percent to a population of

371,992 during the 1971-81 decade, continuing to maintain the highest rate of growth among cities in the country. In the next decade the population of the city further grew to 640,725 an increase by 41.9 percent.

## 2.5 CHANDIGARH AND ITS REGION:

Chandigarh has grown rapidly in recent years. It has attracted industries, highly placed educational and other institutions and substantial commercial activities. The location of an HMT plant closed to Chandigarh as well as industrial development within the city has given Chandigarh a good economic base without destroying its basic character. Perhaps because the growth is controlled and directed within the city, rapid and sporadic growth is seen on the outskirts of Chandigarh which is neither all planned nor have conceptual linkage with Chandigarh.

The governments of Punjab and Haryana have sponsored sizable developments immediately on the periphery of the union territory. Mohali to the south in Punjab has grown very rapidly and continues to expand. Panchkula in Haryana has similarly developed to the north-east of Chandigarh.

The regional plan for Chandigarh prepared by TCPO has sought to integrate these within Chandigarh urban

complex. Thus Chandigarh designed as a single nodal city is being transformed into a multi-nodal city with the central business district of Chandigarh playing the role of the core for the urban complex.

# Chapter-3

AN OVERALL ANALYSIS OF  
CHANDIGARH'S DEVELOPMENT CONTROLS

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AN OVERALL ANALYSIS OF CHANDIGARH'S DEVELOPMENT CONTROLS  
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For the proper planning of Chandigarh's private as well as public sector - Clause 4 of the Capital of Punjab (Development and Regulation) Act 1952 reads as follows :

"For the purpose of proper planning and development of Chandigarh, the Chief Administrator, may issue such directions as may be considered necessary, in respect of any site or building, either generally for the whole of Chandigarh or for any particular locality thereof, regarding any one or more of the following matters, namely:

(a) Architectural features of the elevation or frontage of any building.

(b) Erection of detached or semi-detached building or both and the area of the land appurtenant to such buildings.

(c) The number of residential building which may be erected on any site in any locality;

(d) Prohibition regarding erection of shops, workshops, ware-houses factories or buildings of a specified architectural character or buildings designed for particular



purposes in any locality;

(e) Maintenance of height and position of walls, fences, hedges or any other structural or architectural construction;

(f) Restrictions regarding the use of site for purposes other than erection of buildings.

Every transferee shall comply with the directions issued under sub-section (1) and shall, as expeditiously as possible erect any building or take such other steps as may be necessary to comply with such directions.

### **3.1 DIFFERENT FORMS:**

The area of Chandigarh has been controlled by :

#### **(1) MASTER PLAN**

In the Master Plan the different zones of housing, industrial and commercial area is clearly demarcated. The circulation pattern is also described. As we have discussed earlier that Chandigarh had initially seven types of road and later V8 was added.

The Master Plan also gives the physical form of the city its density pattern etc.

#### **(2) PERIPHERY CONTROL**

The Punjab New Capital (Periphery) Control Act 1952 extends to the area adjacent to and within a distance of

five miles on all sides from the outer boundary of land acquired for the Capital of the State at Chandigarh.

### **(3) PLANNING AND ARCHITECTURAL CONTROL**

Full architectural control have been applied to all the commercial buildings on all the V4's. For shops complete designs have been provided.

System of construction and Architectural treatment of exterior controls which applied to all the buildings in the city centre. It has also applied to all the public and commercial buildings along V2 avenues. It is based on the grid of columns 17'3" spaced, fixed floor heights, shuttering pattern of concrete, screen walls behind the columns.

### **(4) FRAME CONTROL**

Frame control has applied to bulk of the private housing in Chandigarh. It consists of :

- Certain Standard size of doors and windows.
- Gates and boundary walls which conforms to the standard design.
- Height of buildings etc.

### **3.2 CONTROLS SPECIFIC TO COMMERCIAL AREAS:**

These have their application as the controls for the

special areas in the Master Plan. Thus at the city level, these have been applied in the city centre and along the principal V2's while at the neighbourhood level, these take the form of the architectural design controls along the V4 shopping streets.

(1) In the city centre

Development is controlled with respect to:

- Zoning as per the concept.
- Bay size/Module of shop.
- Mode of construction/Material to be used.
- Height controls.
- Number of floors; coverage on each floor.
- Facade Controls.
- Use of floors/basements.
- Curtain walling and glazing.
- Steel shuttering pattern.
- Advertisement control order.

(2) Along the Principal V2's

The control specifies the;

- Setbacks, bulding line from V2 road.
- Maximum height for building.
- Building form, bulk.

- Number of stories.

- Facade characteristics.

**(3) At the neighbourhood level**

The control is

- Zoning as per layout.

- Types of shops. (S.C.Fs booths, semi-industrial etc.)

- Architect's Design and Specification.

- Use for each shop.

# Chapter-4

## HEIRARCHY OF COMMERCIAL AREAS

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## HEIRARCHY OF COMMERCIAL AREAS

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As per the master plan proposal for Chandigarh approximately 5% of the total developed area has been used for retail and wholesale commercial purpose. This area has been distributed systematically within the town under a well defined hierarchy of commercial centres at

- CITY LEVEL
- DISTRICT LEVEL
- NEIGHBOURHOOD LEVEL
- CONVENIENT LEVEL
- GRAIN, FRUIT AND VEGETABLE MARKET
- NON PLAN ENTERPRISES

### 4.1 CITY LEVEL PROVISION:

Commercial facilities at the city level have been provided at the following locations:-

City Centre Sector 17

Commercial areas along V2's

It contains:

- Showrooms along Madhya Marg

-Showrooms along Himayalaya Marg

-Showrooms along Dakshin Marg

-Fruit, Grain and Vegetable market, Sector-26

#### 4.1.1 City Centre

The city centre occupies an area of one typical sector (242 acres). It measures half a mile in width and three fourth of a mile in length. It is broadly divided into two zones: the northern zone and the southern zone. It has a central chowk. It contains Central Library, Regional Headquarters of Post and Telegraph Office, Chamber of Commerce, Cinema, Commercial housing and Regional Headquarters of Banks. Two wide pedestrian crosses at the chowk and around the chowk more important buildings are grouped.

The sector 17 or the city centre is bound by major arterial roads on all the four sides. Madhya marg and Udyog path bounds it on the north and south sides while Himalaya and Jan marg bounds it on the east and west sides. Vehicles enters in the city centre from all the roads and leads to the parking areas at the outer edges of the complex. In order to facilitate the movements of the cars across the city centre without interfering with the pedestrian areas, a bridge have been provided to carry

traffic above the pedestrian ways.

All the pedestrian ways leads to the central area which ranges 154' to 240' in width and the plaza itself measures 414'\*360'. After the plaza there is a 12' deep verandah which leads to the commercial areas. This plaza is directly connected to the parking areas.

According to the plan, the buildings in the city centre would be four story high grouped around a central chowk. This is essentially an Indian feature. The chief among these are Town Hall, Post and Telegraph Office, the Chamber of Commerce and a few Banks. Of these the Post and Telegraph building is 140' high and all of the rest are four storied rising to a height of 56'. The shop cum office buildings have exclusive shops and restaurent etc. on the ground and in some cases on the first floor with offices only on the upper three floors.

#### **4.1.2 Commercial areas along V2's**

In the land reserved for commercial belt along the V2's specialised market were visualised. It was planned to developed four or five markets for wholesale business along the V2 i.e. Station-University road. These were to be for building materials, agricultural goods, machinary, motor cars, printing etc. Since it was felt that initially there



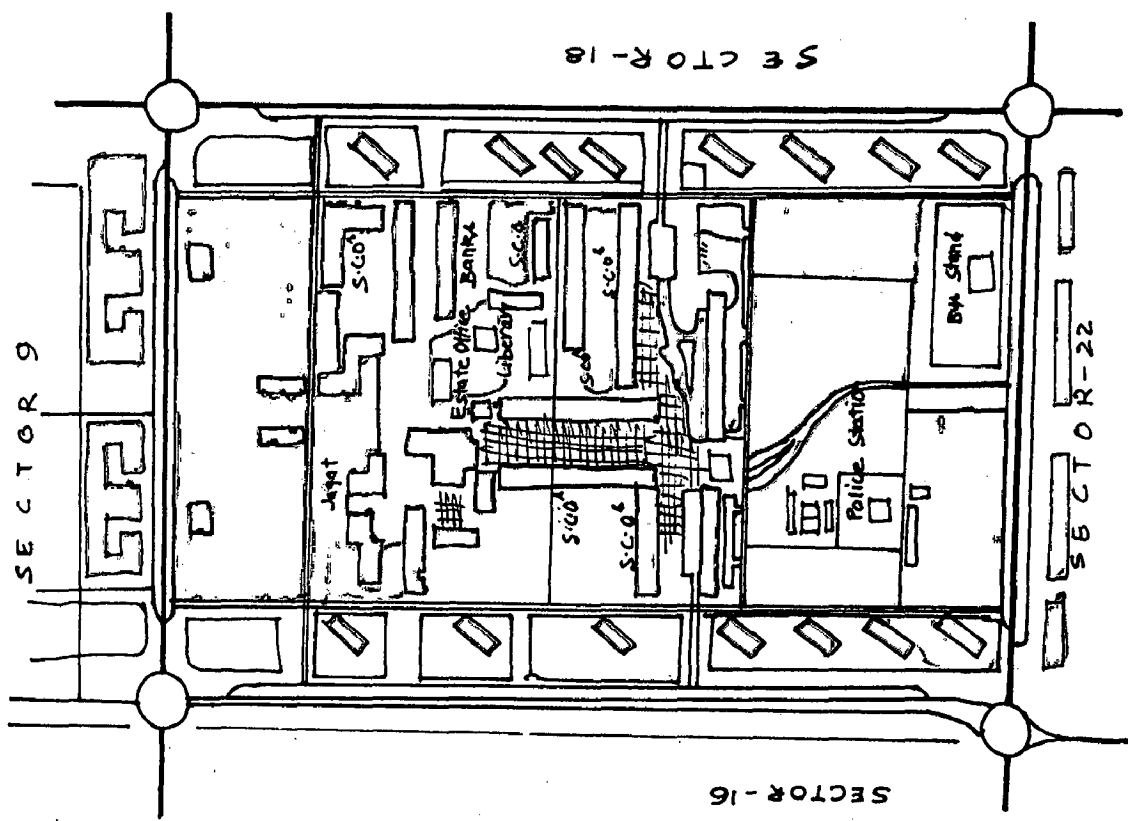
might not be sufficient demand for sites in each of the market, it was agreed to locate all trade in one nucleus to start with and to relocate them into their respective markets later. Designs for the first market to be developed in sector-7 specified a standard height of 45' for all the buildings and an 'architectural control' to which the private developers had to conform. Land was again to be sold with a standard 'bay' as one unit. To give a sense of 'grandeur' along these roads, the smallest unit was on the same scale to that in the city centre and the height of all the buildings along V2 was to be greater than that of residential building in the city.








With the passage of time the development along these V2's have taken place. On the Madhya Marg the commercials have developed along Sector 7,8 and to some extent in Sector 9 but no market have developed in sector 10, 11 and 12 so far.

Similarly on the Udyog path the market have developed in Sector 22 only.

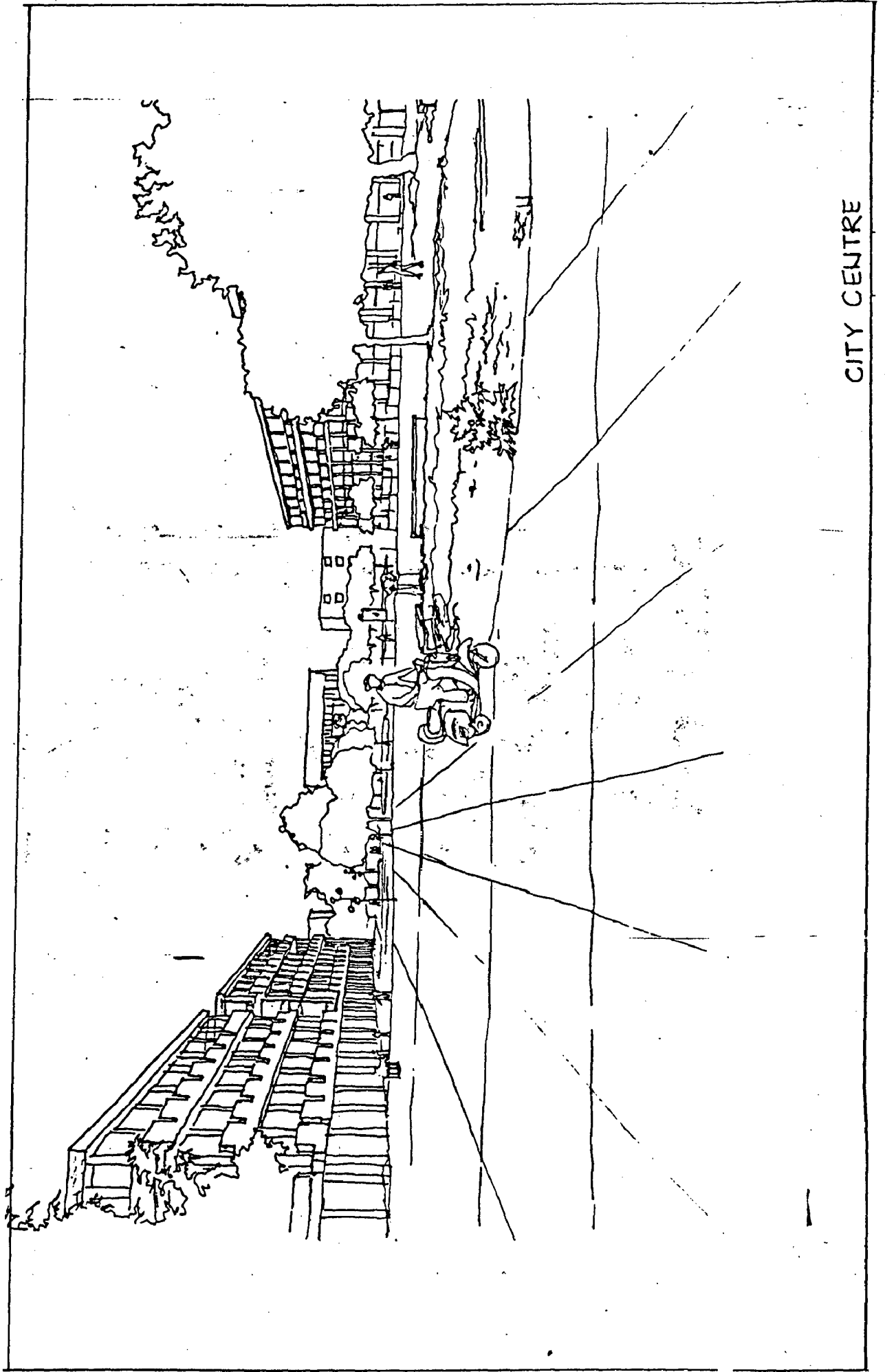
#### 4.2 DISTRICT LEVEL:

About 112 acre of land in sector 34 has been zoned as sub-city centre .It's plan have been finalised but the



-  COMMERCIAL (shop cum office)
-  PUBLIC-SEMI PUBLIC
-  OPEN SPACES/GREENS
-  PEDESTRIAN PLAZA
-  PARKING
-  OFFICES - 6 FLOORS
-  COMMERCIAL DEVELOP-  
-MENTS ALONG MAJOR VQS

**CITY CENTRE: LAYOUT**



CITY CENTRE

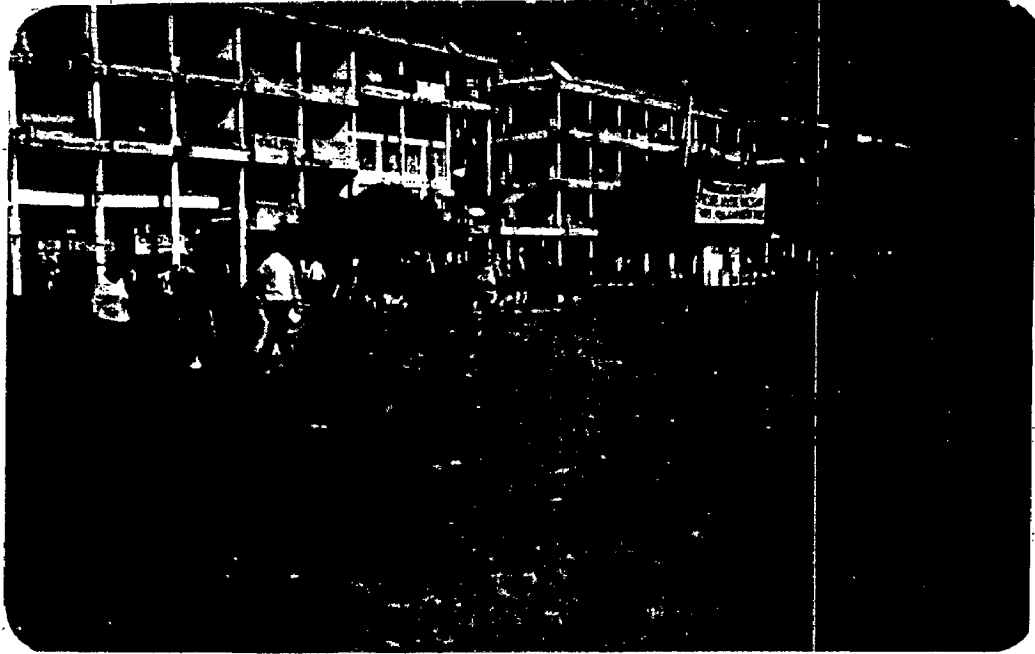


FIG.4.1 A VIEW OF CITY CENTRE, SECTOR-17. THE WIDE PLAZA HAS GIVEN IT A SPECIAL OUTLOOK.

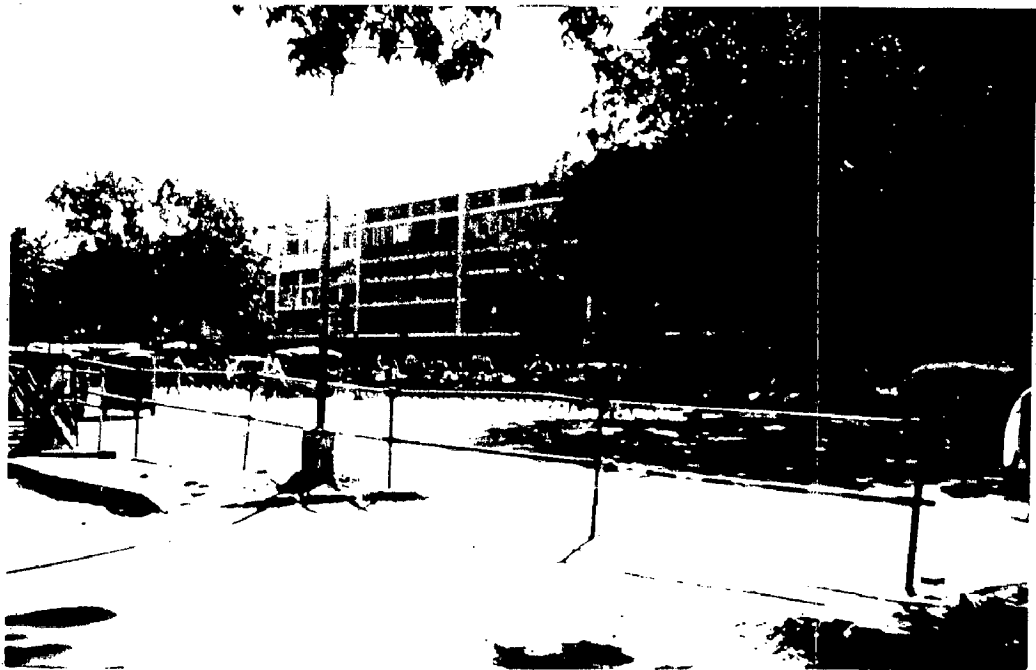


FIG.4.2 MARKET ALONG A V2, SECTOR-22 IS ALSO DOING BRISK BUSINESS.

full development have not taken place even now.

#### 4.3 NEIGHBOURHOOD LEVEL:

Shopping centres at neighbourhood level are main retail outlets distributed in the entire city along a major road called V4 of a sector.

This local level provisions for consumer goods and services in the residential sector was in a linear form. This was to be restricted along one side of the bazaar streets to avoid the necessity for users to cross the road frequently. The architects consideration while designing these shopping streets were described by Jene Drew-

"A sector is a small world but it presents many of the same problems as a big town .Scale has to be established and to this end the hub of the sector, the market, had to dominate a little over the housing areas.he architects who had a better sense of importance of physical environment than administrators, laid down that the main part of this should be three storeyed and also be strictly architecturally controlled. Thus shop owner could build their own shops but to the architects design.

Variety of shops were provided so that both small shop owners and larger ones could be accomodated.

#### 4.4 CONVENIENT SHOPPING:

In the first phase of development of Chandigarh, no convenient or service shoppings were provided. For any type of shopping the people had to go to the sector market. So the people who lived at the circumference of the sector had to cover more than half a km. for petty things. Therefore in the second phase development it was decided to provide convenient shopping in every sector. This shopping was provided at the four corners of the sector.

#### 4.5 NON PLAN ENTERPRISES:

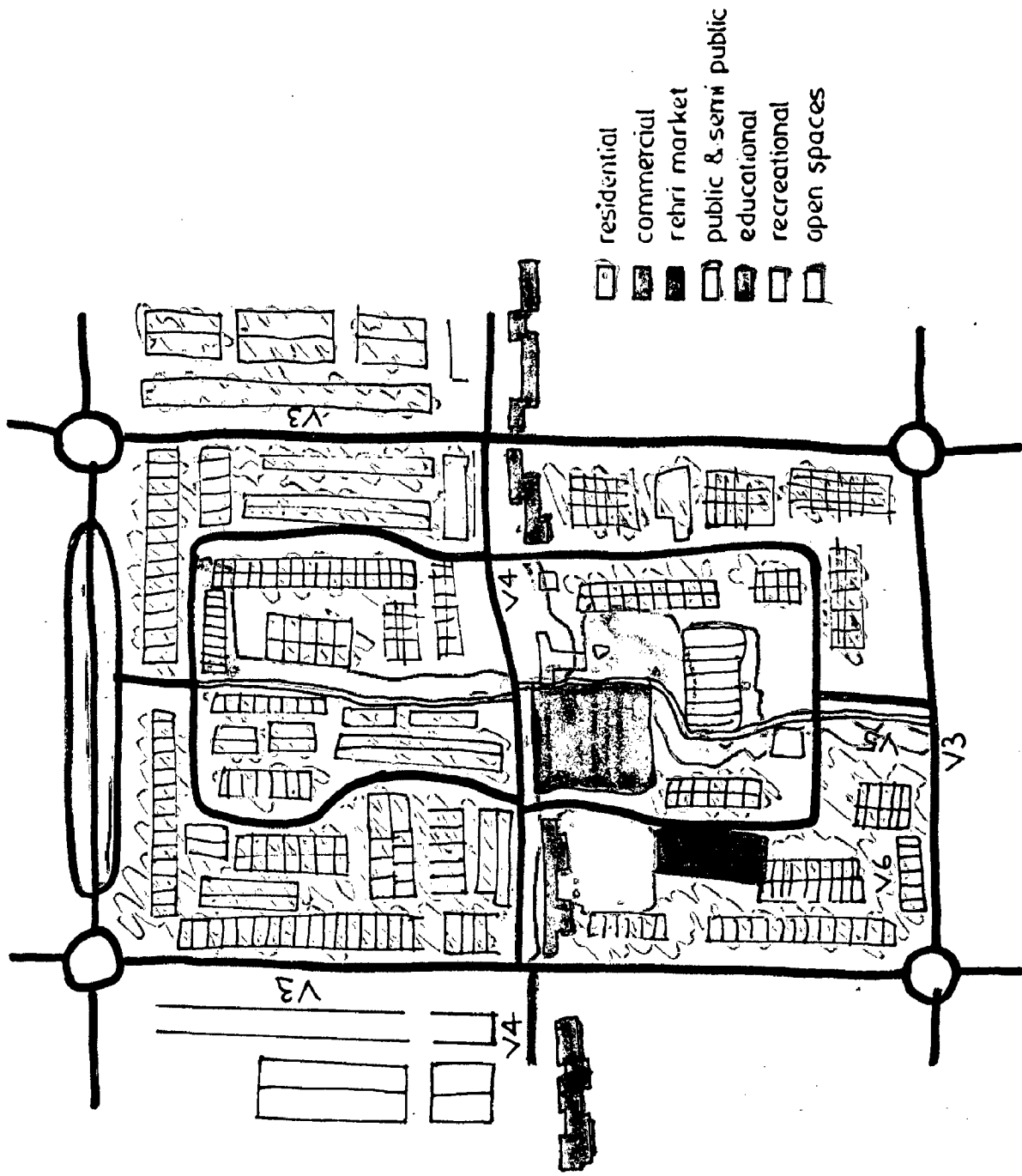
All the non plan enterprises were further divided into seven categories on the basis of their mode of operation.

CATEGORY-1 Mobile hawkers on foot or bicycle who take their goods or services to the customers rather than being attached to a fixed location. Typical examples included balloon and paper flower seller & knife sharpener.

CATEGORY-2 Pattiwalas offering goods and services from pavement or other ground space. For example petty traders selling cheap clothes and household goods and services such as shoe repairing and cycle repairing.



FIG. 4.3 SUBCITY OR DISTRICT LEVEL MARKET  
IN SECTOR-34.



LAYOUT: TYPICAL NEIGHBOURHOOD





FIG.4.4 SHOPPING MARKET OF A SECTOR CARE HAS BEEN TAKEN TO PROVIDE BIG CENTRAL AREA FOR PARKING AND OTHER ACTIVITIES.



FIG.4.5 AREA OF "SABZI MANDI" IN A SECTOR.

CATAGORY-3 Mobile rehris- The term rehris denotes a four wheel barrow which can be pushed. Typical examples were fruit and vegetable sellers.

CATAGORY-4 Immobile rehris- these were enterprises making use of rehris which were obviously immobile as the tyres deflated or wheels sunk into the ground or removed altogether but were not using space other than on which the rehris was parked. Typical example were fruit and vegetable trades and tobaccoists.

CATAGORY-5 Immobile rehris making use of additional ground space. These type of shopkeepers uses the extra ground space in addition to that taken by the rehris. Typical exaples were petty cloth retailers.

CATAGORY-6 Immobile units with or without rehris but making use of additional furniture such as benches and charpoys and fixed tandoors. Typical ex. were Dhabas.

CATAGORY-7 Khokhas which is colloquial language denote cheap improvised structures used as shops which are fixed in location.

#### 4.6 GRAIN, FRUIT/VEGETABLE MARKET:

In Chandigarh as the city grows its daily

requirement also grew. So to cater there need a heirarchy of shoppings were created. Now to feed these commercial areas a wholesale market was also created in sector-26. The location of this sector is in such a way that it is at the outer periphery of Chandigarh and near to the National Highway No-21. So all the products are easily accessible to Chandigarh from all the other parts of the country. Secondly it is also easily accessible to farmers and vegetable growers of the nearby area to feed the market. So sector-26 is serving the Chandigarh as wholesale market.



FIG.4.6 GRAIN MARKET IN SECTOR-7.THE PHOTO CLEARLY DEPICTS THE PURPOSE OF PROVIDING BIG PLATFORMS THERE.

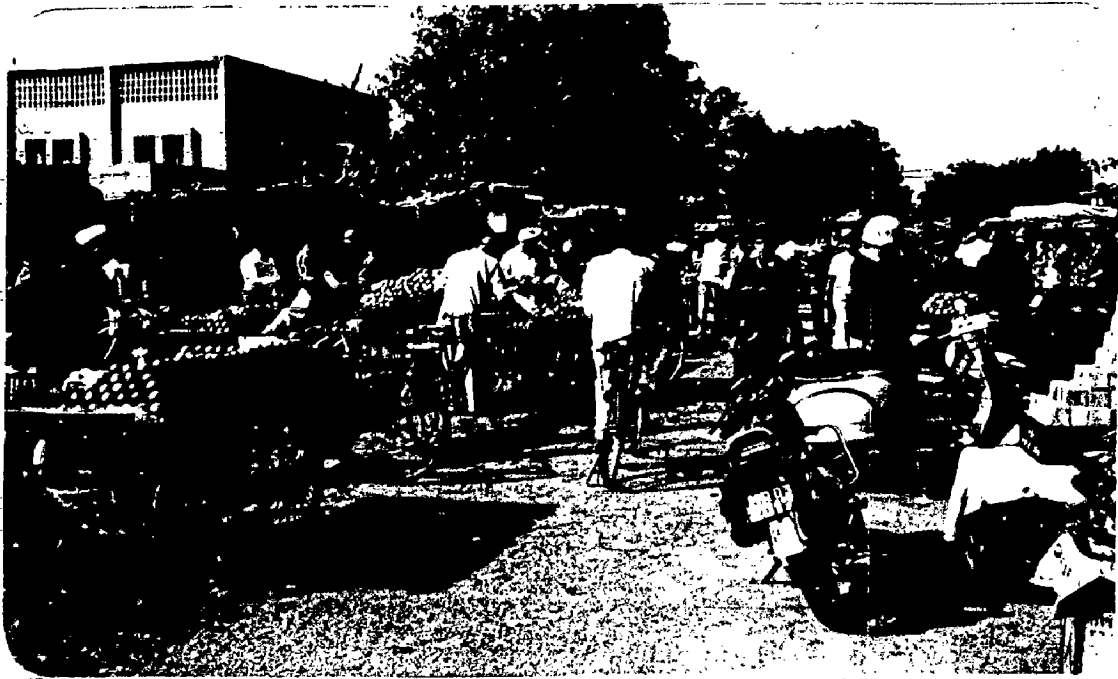


FIG.4.7 REHRIES ARE DOING BUSINESS IN SECTOR-7.



FIG.4.8 A VIEW OF SHASTRI MARKET. THIS MARKET IS DOING BRISK BUSINESS AND IS POPULAR AMONG THE MIDDLE CLASS.

# Chapter-5

## DEVELOPMENT CONTROLS

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## EVALUATION OF DEVELOPMENT CONTROLS

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### 5.1.1 CONTROL:1

According to Punjab New Capital (Periphery) Control Act 1952 the development have been controlled within a distance of 5 miles from the outer boundry of Union Territory.

### 5.1.2 PURPOSE OF CONTROL:

While developing Chandigarh there was a need for planning control. A lot of effort was put into devising legal instruments for such controls in Chandigarh. Among others, these include the Development and Regulation Act 1952, the Periphery Control Act 1952 etc. The overall use of all these legislative measures was to be govern-by what Le Corbusier called "The statue of land" which summarised the conceptual basis from which the planning of the city had emmerged.

So the idea behind the Periphery Control was that, there would be no development which would affect the functions and culture of the city.

### 5.1.3 OBSERVATION:

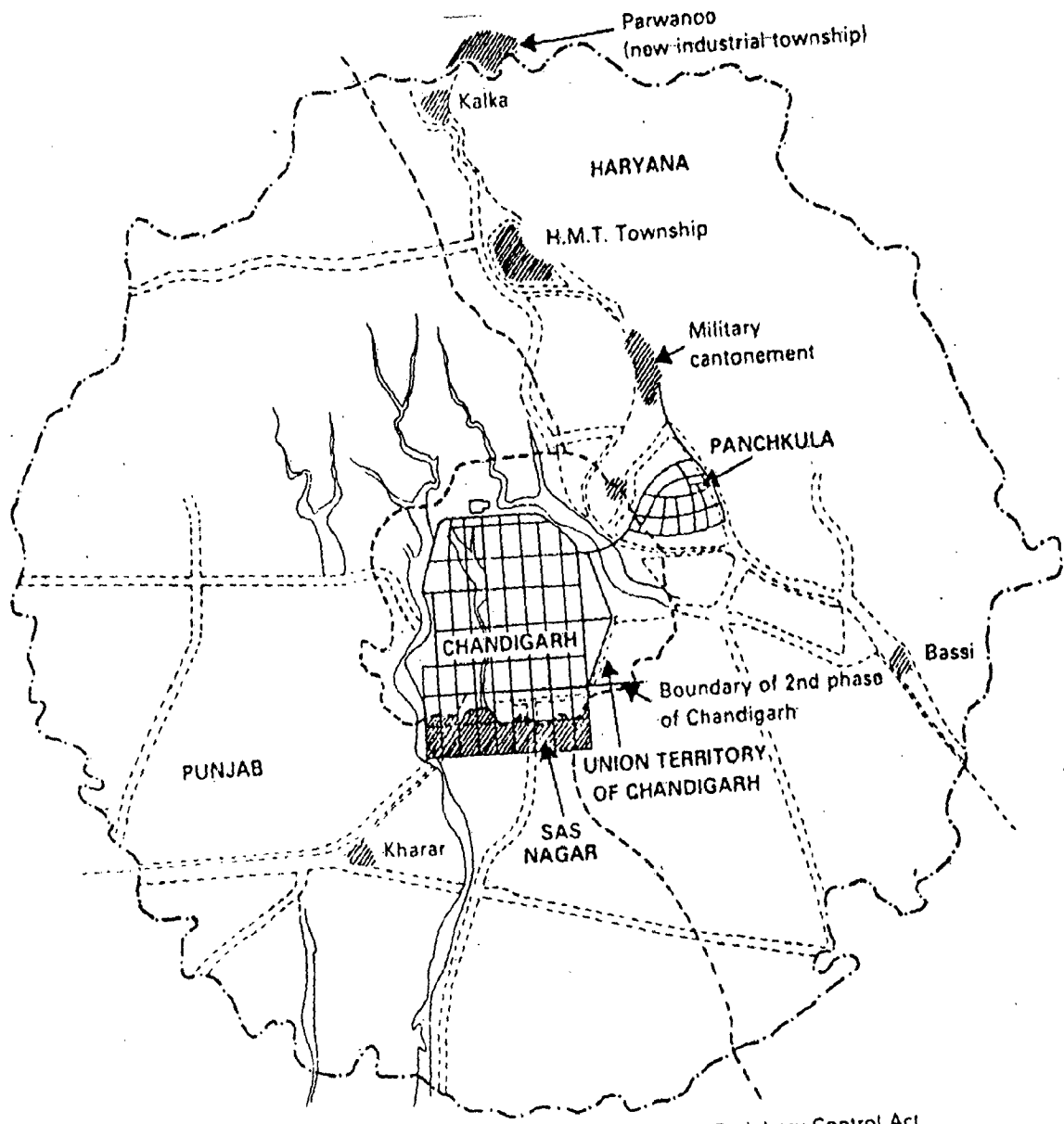
#### Deviation from control:

A no. of development has taken place well within the periphery of Chandigarh. Sas Nagar in Punjab has developed as an industrial centre. It has destroyed the clear functional definition of Chandigarh as purely an administrative and cultural centre. Similarly Haryana Government has also developed Panchcula as a market town. Thus the concept of maintaining a clear rural urban dictomy with Chandigarh as a "radio concentric city of exchanges" has thus already become obsolete. Thirdly a no. of additional development have taken place in the vicinity. These include the establishment of a Military Cantonment and a Hindustan Machine Tools factory within the periphery. A little further out, the development of Perwanoo, a new industrial township in Himachal Pradesh has also reached an advanced stage. The resident staff of all these establishment heavily rely on Chandigarh for various amenities and services.

#### Positive implication:

This peripheral control act has limited the development of Chandigarh upto a certain extent. It has also restricted the development of slums and unauthorised





- Boundary area originally under the Periphery Control Act.
- - - Present boundary of the Union Territory of Chandigarh.
- ==== Communication zone
- //// Towns

FIG. 5.1

colonies around Chandigarh which is so common with most of the other towns in India.

#### 5.1.4 REASONS FOR VIOLATION:

This rule has been violated because the government of both Punjab and Haryana, competing with each other to exploit the economic potential generated by the high investment in Chandigarh and the proximity to administrative offices, have started the development of two separate townships just outside the Union territory.

#### 5.1.5 CONCLUSIONS:

The population supported by a city increases due to these unauthorised developments. This extra population creates stresses on the infrastructure and amenities of the city. When the city can't cope up with the pressure, it succumb. Therefore Peripheral control of any city should be implemented strictly. It should further be ensured that the roads leading to the city should not be encroached upon by these unauthorised developments. The strict adherence to this control will eliminate many problems of the city.

### 5.2.1 CONTROL:2

- Mode of construction to be an R.C.C. framed structure with a fixed bay size. ( Bay size of 17'3" x 104'11" in sector-17 and 17'3" x 97' in sector-34)

- Two such units can be used as a single shop.

- The whole construction is to be finished in one full operation.

### 5.2.2 PURPOSE OF CONTROL:

- For a four story large building the R.C.C. framed structure is the best choice as it is economical. We can also get interior spaces as uninterrupted as possible and to cater to the diverse nature of business and professional needs.

- The two way span of 17'3" was chosen for economy in construction.

- So that the asthetic look of the building would enhanced and there would be similarity in the city centre.

### 5.2.3 OBSERVATION:

#### Deviation from control:

At the time of development of city centre, the individual plots or blocks of land were sold to the private developers who had to built strictly according to the

specifications. Therefore the controls about the construction have been implemented strictly. Violation of these rules have not been seen. While the control about the number of units used in a shop has been grossly violated.

**Positive implication:**

- Since the building is to be completed in one full operation, the material used, the quality of the material and the technology would be same for every part of the building. It would give an aesthetic look to the whole building.

- The construction of building is not delayed as the building can't be put to use unless it is fully completed.

**Negative implication:**

Since the building has to be finished in one full operation, the initial cost of the building would be very high.

**5.2.4 REASONS FOR VIOLATIONS:**

Violation of use of shop module is only due to socio economic condition of the people. As we know that most of the people belonging to Chandigarh are service class. So they can't afford posh departmental stores on the line of

Western countries. Therefore it has led to violation.

#### 5.2.5 CONCLUSIONS:

Fixing the construction material and bay size has led to monotony in the city centre. The control of completing the building in one operation should be strictly followed as it save the costumers and commuters alike from a lot of problems.

#### 5.3.1 CONTROL:3

In the city centre sub divisioning of shops is not allowed.

#### 5.3.2 PURPOSE OF CONTROL:

Le Corbusier had tried to develop the city centre on the basis of large departmental stores as prevalent in the West. Therefore he had large size of shops in the city centre.

#### 5.3.3 OBSERVATION:

##### Deviation from control:

- It has been seen that only a few shops utilizes the whole area. Many shops have subdivided. Smaller shops have opened up within the large stores. These consist of fancy item, icecream, photostat, STD (PCO) shops etc.

**Positive implication :**

-Smaller shopkeepers can enjoy the advantage of location just by paying the rent, otherwise they would not have access to the commercial area because of high price.

- It has led to the more productive use of space.

- It also allows diverse nature of business taking place at the city centre.

**Negative implication :**

- It has defeated the concept of big departmental store at the city centre and single bay shop at the neighbourhood. The shops at the city centre has become like any other sector.

- The control of show window is being violated because of the opening of shops in it.

- Because of the numerical increase in the number of shops, the number of advertisement has also increased which violates the advertisement control.

- Stress on services like water, electricity consumption, stress on present fire safety provisions and common shared facilities like parking etc.

**5.3.4 REASONS FOR VIOLATION:**

- The population of Chandigarh has grown more than twice than the originally planned for (Planned population -

3.5 lakh Population according to 1991 census-6.4 lakh) but the commercial area has not grown so much. They are inadequate. The size of shops in the city centre is relatively large for many activities which has come up. (i.e. STD PCO, Hairdressing, Tailoring etc.) but since sector-17 is the main commercial centre therefore all these activities are bound to grow there, though illegally.

- The congestion at city centre has also increased due to the offices of all the three state governments being located there.

- Subdivisioning has also occurred on account of

High rental value

No land for future expansion.

- Secondly departmental stores are not successful in India because service is done here at the personnel level which is not possible in the departmental stores.

- Chandigarh is a consumer city with sixty percent as the government employee with fixed income. Hence big departmental stores on the line of say Connaught Place Delhi are not viable atleast for the present.

#### 5.3.5 CONCLUSIONS:

- Enforcement of subdivisioning is very difficult on

account of very scale of the activity..

- Problem of subdivisioning is very difficult to solve in old built up and locationly advantageous areas.

- Violations of the concept and size in city centre being in response to the need and requirement of such type of establishment to serve the present population.

#### 5.4.1 CONTROL:4

- An advertisement panel of fixed dimensions and at a fixed height from the ground floor with the size of letters specified is provided for each shop in between the bays only on which the shopkeeper can advertise.

- No hoardings etc. is allowed anywhere else or any part of the face of the buildings.

- No sky sign or neon signs are allowed.

#### 5.4.2 PURPOSE OF CONTROL:

- The basis of this control is to create uniformity in the manner of display of advertisement in the city centre.

- That each shopkeeper should have equal opportunity to advertise his goods.

- That one should not advertise at the cost of others (therefore neon signs are not allowed)



- That one should not sell by just advertisement alone.

#### 5.4.3 OBSERVATION:

##### Deviation from control:

- Shops and offices at upper floors do not have space to advertise so they are at disadvantage as compare to the shops on the ground floor.

- Shops which have illegally opened up in the basement advertise their product or shops in the stair itself and spread all over the ground floor.

- Smaller shops that have come up on account of the subdivisioning of bigger shops on the ground floor do not have space to advertise because the shopkeèper who subdivide his shop to extract rent but keeps the advertisement panel for himself.

##### Positive implication:

As a concept if the advertisement control is properly implemented it would contribute immensely to the order in the city centre and nobody will be at loss just due to lack of advertisement. So everybody would have equal opportunity.

##### Negative implication:

This concept not being successful due to the changes and violation of commercial area itself. So it was

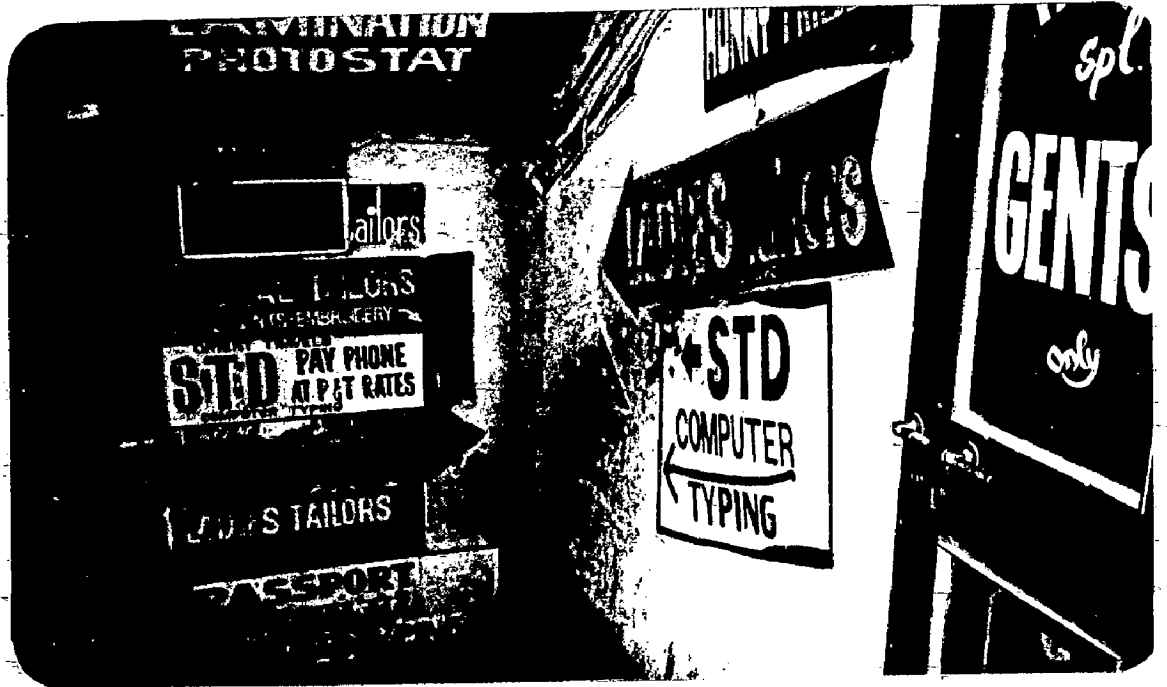


FIG.5.2 ADVERTISEMENTS ARE SCATTERED ON COLUMNS, BEAMS AND IN STAIRS OF THE BASEMENT ALSO.

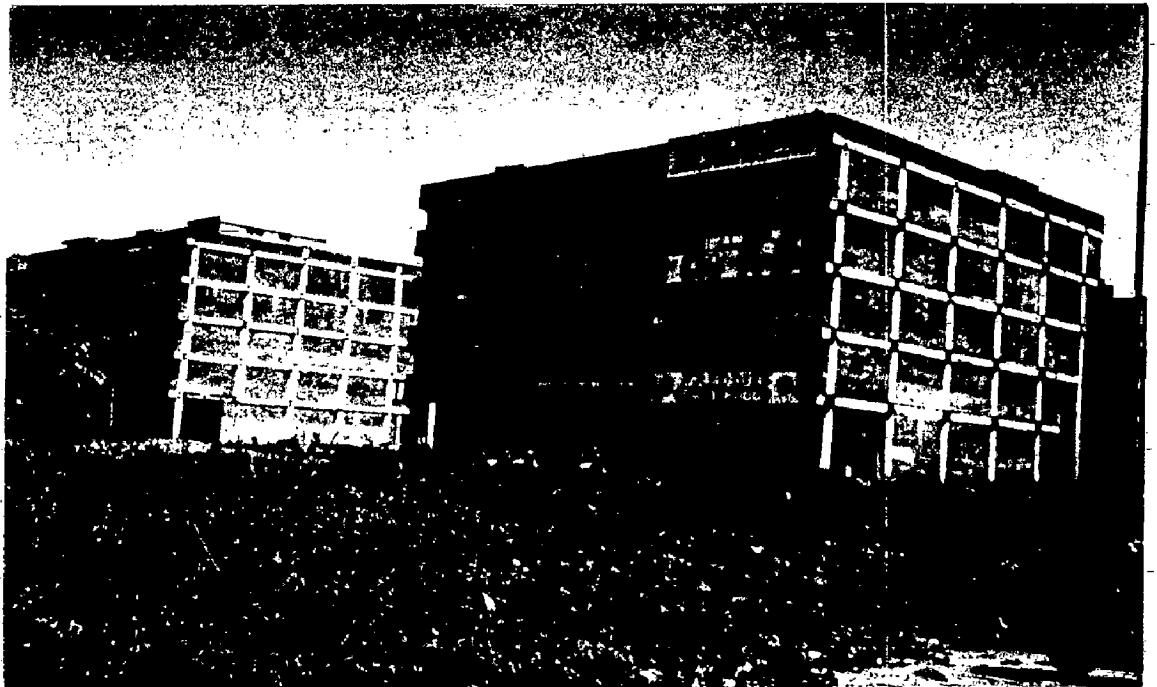


FIG.5.3 AS THERE IS NO PROPER SPACE OF ADVERTISEMENT FOR UPPER FLOOR PEOPLE. THEY ADVERTISE ON THE UPPER FLOORS ITSELF.

bound to change. It also changes due to the new innovation in the advertisement world continuously and therefore it is not possible to implement a rule to all the advertisement panels effectively.

#### 5.4.4 REASONS FOR VIOLATION:

- Violations are due to lack of sufficient space for advertisement on account of increase number of shops either in the basement or on the first floor and due to subdivision of shops on the ground floor.

- Since no space has been provided for the advertisement in case of the shops and offices on the upper floor.

- Due to the failure of the enforcement machinery to check subdivision of shops and the use of basement for commercial purpose.

#### 5.4.5 CONCLUSIONS:

The advertisement panel near the junctions create site distance problems. Many times it led to accidents. Therefore the policy is good and is quite successful though violations are also there. Large hoardings along the roads are almost absent. All this has contributed to the

asthetics of the city.

#### 5.5.1 CONTROL:5

All curtain walling and glazing to be of prescribed standards. This fixes the glazing pattern of shop fronts and also the glazing design of shops and offices on the upper floors.

#### 5.5.2 PURPOSE OF CONTROL:

To contribute to the asthetics of the city centre.

#### 5.5.3 OBSERVATION:

Deviation from control:

- Subdivisioning of bay leading to the violation of the shop front design.

- Show window being used as a sale booth instead of a display space or subdivided or sometimes used for installing air conditioners.

Positive implication :

The smaller shopkeepers who can't pay the rent for the whole shops and require only a little space is accomodated.

#### 5.5.4 CONCLUSIONS:

- If the rules are imple mented strictly it will



FIG.5.4 SPACE FOR SHOW WINDOW IS BEING  
USED FOR PUTTING A.C..

lead to the monotony and dullness.

- Some shops require show window (jewellery, shoes, clothes) while other do not. (general merchandise etc.) So they try to change the use of space as per their requirement.

#### 5.6.1 CONTROL:6

- Under the architectural control of the buildings the grid of columns and bay size are fixed.

- Use of material and steel shuttering pattern for all R.C.C. work of all external facade is specified.

#### 5.6.2 PURPOSE OF CONTROL:

- To impart order and uniformity to the city centre.

#### 5.6.3 OBSERVATION:

##### Deviation from control:

- Strict adherence to the provisions of control.

##### Positive implication :

- Order and distinct form is there at the city centre.

- Ease of construction.

- Provides inner flexibility for the space which can be made as per inner requirements.

#### 5.6.4 CONCLUSIONS:

The size of the grid of columns has been adopted in such a way that the space would be used much more judiciously. The fixing of shuttering pattern has increased the aesthetic look of the city centre.

#### 5.7.1 CONTROL:7

- Basement to be used only for the purpose of records, storage, godowns, lift mechanism etc.

- It is not to be made into habitable spaces and thus sewerage and water connection are not to be provided.

- It has not to be partitioned.

#### 5.7.2 PURPOSE OF CONTROL:

According to the planning of commercial areas shopping is meant at the same level as the plaza so that the people can simply walk into the corridor and do their shopping. Hence the basement is to be used for the purpose specified.

The plan also specify that if in the future the shopping area is exhausted on the ground floor than the first floor is to be utilised for this purpose and subsequently the office floor can become the shopping floors.

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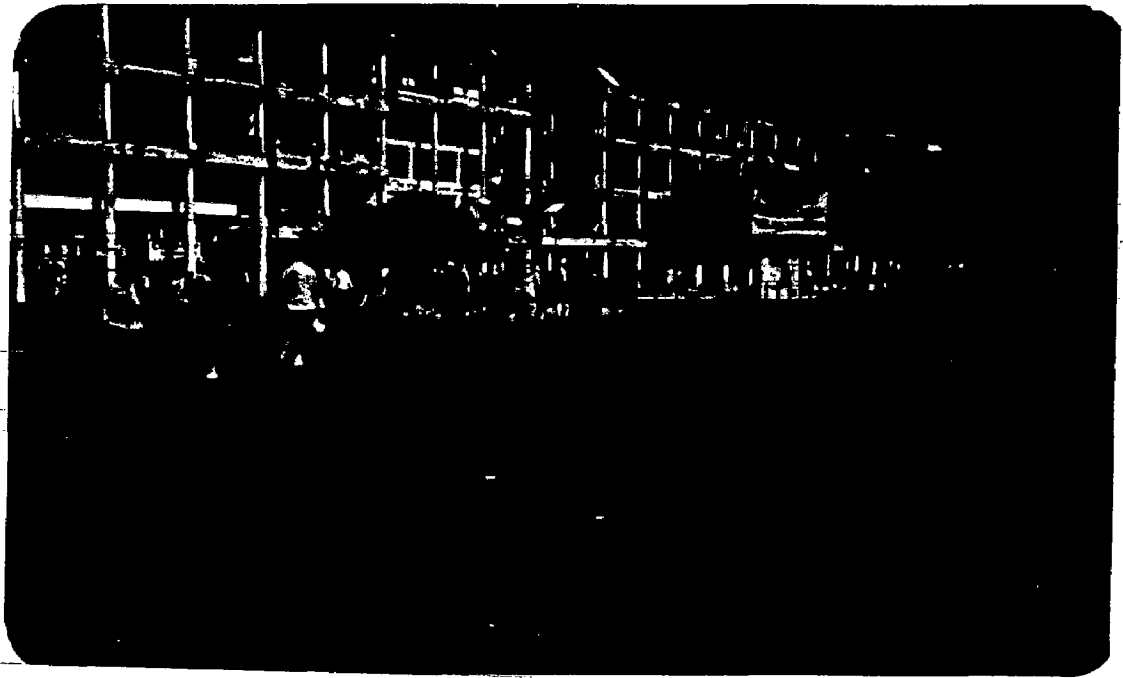


FIG. 5.5 & 5.6 THE CONTROL ABOUT THE SPECIFIC BAY SIZE AND GRID OF COLUMN HAVE BEEN STRICTLY IMPLEMENTED.





### 5.7.3 OBSERVATION:

#### Deviation from control:

- Basement are extensively partitioned to be used as shops for service functions as PCO, tailoring, beauty parlours etc. Many basements have 8-10 shops.

- The display panel for functions in the basement littered all over the ground floor space thus violating the advertisement control order.

#### Positive implication:

The small scale enterprises which help the other shops (such as tea shops etc.) and others which don't find place anywhere else like photostat shops, tailoring, beauty parlor and consultant etc.) or which don't need the show window space for display or which don't have problem of waste disposal or have manufacturing functions have find place in the basement.

#### Negative implication:

- Problem of light and ventilation of innermost spaces occurs if the basement is partitioned.

- Problem of waste water disposal in case of restaurant located in the basement as no sewerage and water connection is allowed there.

- The shops having come up in the basement, need space for advertisement which is done where ever empty space is there i.e. on balconies, columns and stairs thus violating the advertisement control order.

- The increased number of shops create stresses on the existing services which fall short of requirements.

#### 5.7.4 REASONS FOR VIOLATION:

- Theoratically the basement was to be used by all the upper floors for the purpose specified in the control and for that he had to pay rent. In case he does not pay so or has no use, the owner sublets to the shopkeepers from the outside who can pay.

- Since the independent access has been provided to the basement from outside, the process of subletting the basement is easier.

- The enforcement machinery, once the first six months elapsed, can do nothing except fall into the trap of the routine process of notices and court hearings.

#### 5.7.5 CONCLUSIONS:

Design controls should not be such that they leave room for violations. Thus the enforcement become unrealistic and impracticable. Hence the control in the

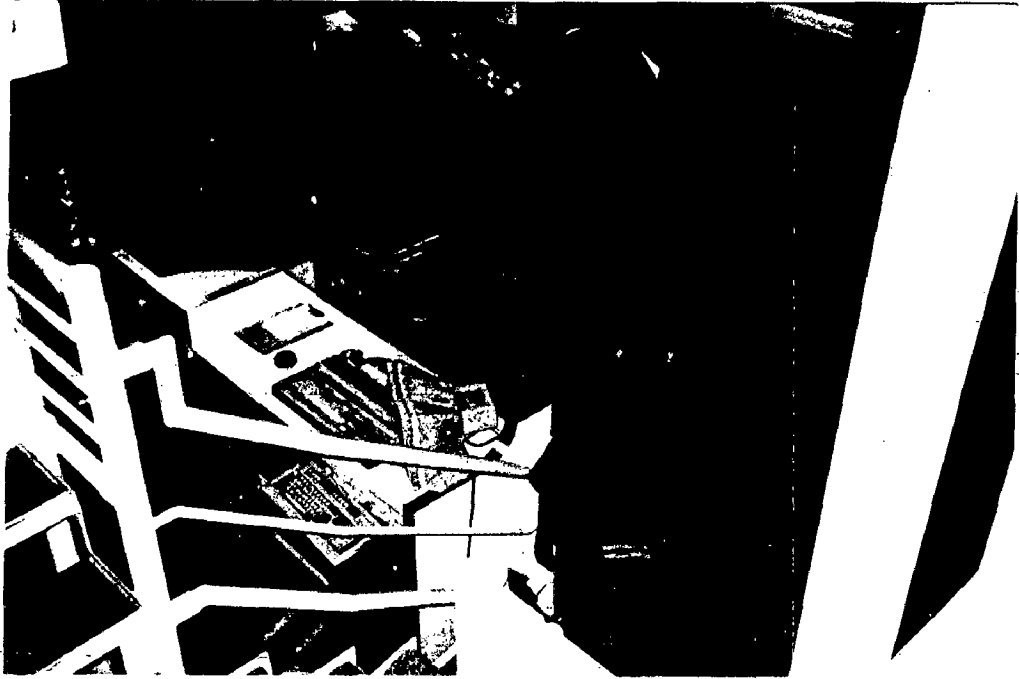


FIG.5.7 SHOPS IN BASEMENT RIGHT IN THE HEART OF THE CITY, SECTOR-17. VIOLATION OF BASEMENT USE.

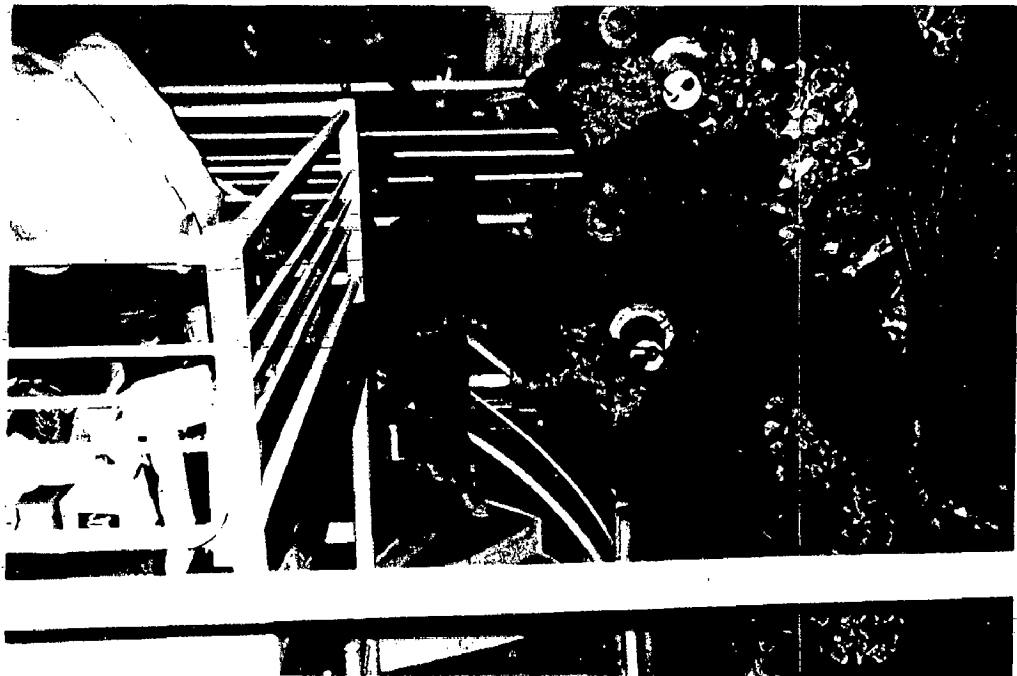




FIG. 5.8 BASEMENT IS SUBDIVIDED AND 8-10  
SHOPS HAVE OPENED UP THERE.

form of assigning the specific use that a basement is to be put to is grossly unsuccessful in terms of the violations that have come up.

#### **5.8.1 CONTROL:8**

- 12' wide verandah space is to be left on the ground floor to provide protection to the pedestrians against weather.

- 6' wide balcony space to be left on all sides in case of upper floors.

#### **5.8.2 PURPOSE OF CONTROL:**

- It is to be used as circulation space and an effective sitting space in winter on the upper floors.

- To provide a continuous arcade for the pedestrians and protect them against weather on the ground floor.

#### **5.8.3 OBSERVATION:**

##### **Deviation from control:**

- The verandah space is being widely encroached by the people for putting their goods. Most of the restaurant encroaches the verandah by shifting their counter outside the shops.

- Most of the balconies are not much in use. They are mostly covered to provide extra space.

### **Negative implication:**

- Discontinuity in the height of corridors at various places does not protect the pedestrian against the weather and thus partially defeats the concept of providing it.

- There is violations deliberately to use the excess space.

### **5.8.4 REASONS FOR VIOLATION:**

- Most of the use or the encroachment on the ground floors are flexible (counter can slide inside the show window, "pattriwalas" selling belts, shoelaces move within minutes). So they violate rules without any fear.

- On the upper floor though the balconies have been provided due to strict architectural control but this space is not utilized properly . Therefore it is being used for other purposes.

### **5.8.5 CONCLUSIONS:**

- Control to provide 12' compulsory verandah on ground floor is good and successful.

- Control of 6' balcony space on upper floors should not be there, because it does not solve the vary purpose of providing it.

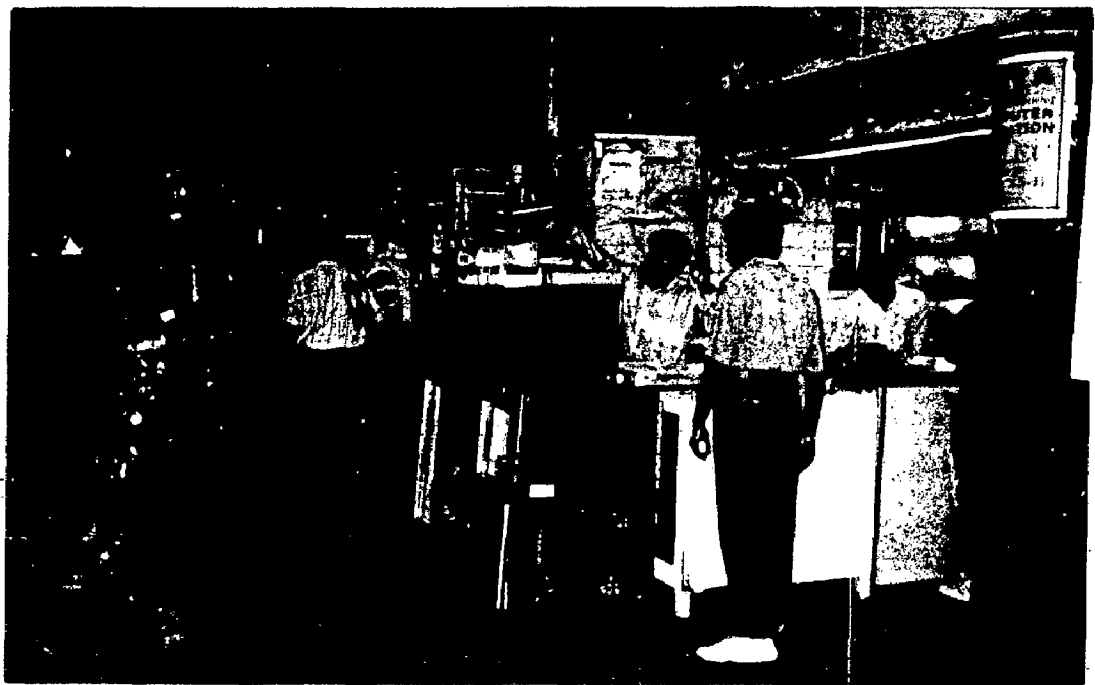


FIG. 5.9 THE ENCROACHMENT OF THE VERANDAH IN FRONT OF SHOPS IS MAINLY DONE BY "MITHAIWALAS". HERE IS AN EXAMPLE.



FIG. 5.10 PEOPLES ARE USING VERANDAH FOR PARKING.

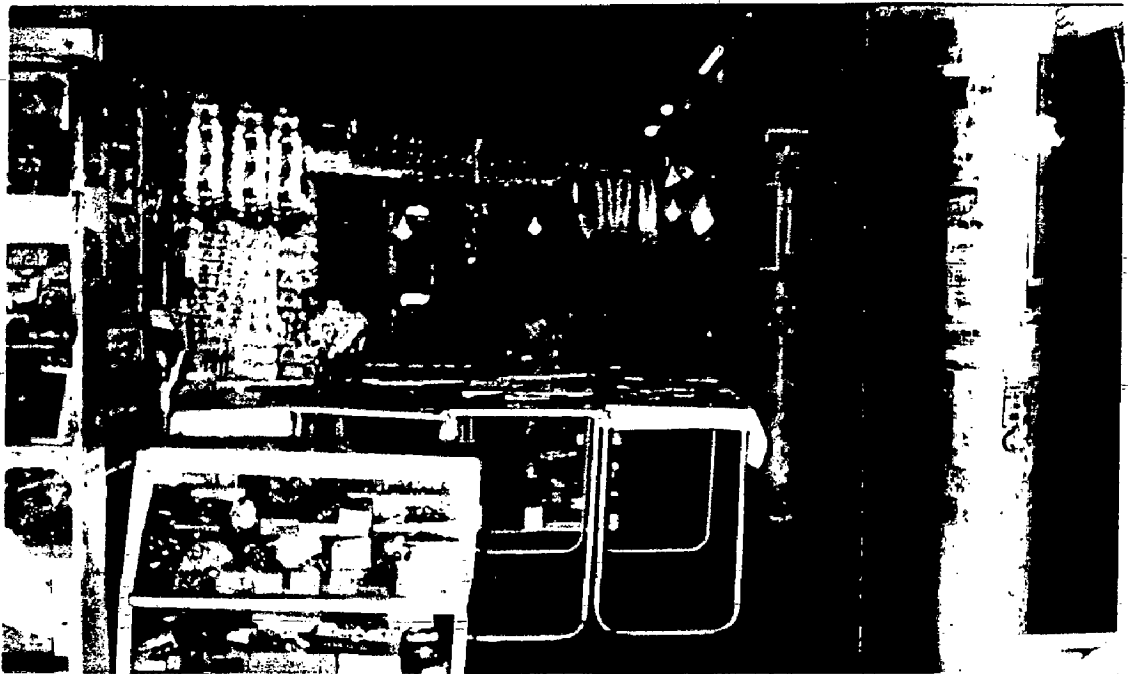


FIG. 5.11 VERANDAH IS ALSO BEING USED FOR PUTTING UP SHOP. THE PHOTO SHOWS THAT ONLY ONE PERSON AT A TIME CAN CROSS THE VERANDAH.



FIG. 5.12 ANOTHER USE OF VERANDAH. STORAGE OF GOODS.



#### 5.9.1 CONTROL:9

Although the exact nature of market along V2's could not be anticipated, the control is with regard to;

- Setback, building lines from V2 roads.
- Maximum height of 45' for all buildings.
- Building form, size.
- Number of stories.
- Facade characteristics.

The private developer had to adhere to all these controls and after construction it was sold with standard bay as one unit.

#### 5.9.2 PURPOSE OF CONTROL:9

In the commercial belt of land reserved along V2's specialised market were visualised. It was planned to develop four or five markets for wholesale business along the V2's (Station-University road i.e. Madhya Marg ). These were to be for building material, agricultural goods, machinery, motor car, printing press etc. Since it was felt that initially there might not be sufficient demand for sites in each of the market, it was agreed to locate all trades in one nucleus to start with and to relocate them to there respective market later. Design for first market were

prepared to be developed in sector-7.

To give a sense of grandeur along these roads, the smallest unit was that to a similar scale as in the city centre and the height of all the buildings along the V2's was to be greater than the residential buildings of the city. Along the V2 (Jan Marg) big building such as offices, banks, hotels and other important institutions were to be constructed.

### 5.9.3 OBSERVATION:

- The bulk storage, handling and service functions of the shops necessitated the provision of big open yards, which could be fed by the service road at the rear. These have been misused.

- Courtyards have been totally or partially covered depending on the nature of the activity going on in them with disregard to light and ventilation inside.

- Services and manufacturing functions have come up instead of storage and handling functions.

- Violations in the form of change in use of the shop against the trade allotted, for a different trade as is happening in the city centre and other sector shopping streets.

- In sector-26 vegetable, fruit and grain market,



FIG.5.13 ENOUGH SPACE HAVE BEEN LEFT FOR  
PARKING IN THE MARKET ALONG V2.THE  
MARKET IS SEPARATED FROM THE MAIN ROAD  
BY REFUGE ISLAND.



FIG.5.14 THE MARKET IN SECTOR-7 IS DOING  
WHOLESALE AND RETAIL BUSINESS. THUS  
VIOLATING THE CONTROL.

the godowns meant for storage have been put to use as regular shops, while storage is being done on the open platforms.

- Irrespective of the shops at the front, wholesale and retail activity have come up.

#### 5.9.4 REASONS FOR VIOLATION:

- Change in use of shop against the trade allotted is inevitable as that trade is practiced which is more profitable.

- Oversize open courtyards ( 80' length of shop and 120' length of courtyard) have been provided in sector-7 showrooms and oversize open platforms in the case of grain market shops have been provided. Again the godowns for respective shops are provided at the separate place which are inevitably converted into the commercial use.

- Associated functions like furniture manufacturing in the courtyard behind the furniture showrooms, marble cutting, grinding have also come up. It is because they are inseparable from their associated business.

#### 5.9.5 CONCLUSIONS:

The control as far as its provisions go, it has been successful. The construction, setback and other

controls are strictly adhere to but the concept of providing this market is partially fulfilled.

#### 5.10.1 CONTROL:10

- In the market where S.C.F. is there, the upper floor would be used as flat.

#### 5.10.2 PURPOSE OF CONTROL:

- It would help the shopkeepers a lot as they would have their flats over their shops.

#### 5.10.3 OBSERVATION:

##### Deviation from control:

- Flats have been rented out to individual member of comparatively lower income groups for residential, commercial or service functions which ever is more profitable.

- The owner lives elsewhere.

- When families move out of the flats, the courtyards and verandahs are encroached upon and covered to be put to use for economic gains.

- This type of violation is more in middle income high density sectors. (i.e. sectors developed in the second phase.)

#### 5.10.4 REASONS FOR VIOLATION:

- When the shopkeeper's income increases, in order to increase their social status they own their flat anywhere else and rented out the flats over the shops.

- In some cases when the business increases, the people require more space for it. But there is no space available. Therefore they use their own flat as a godowns.

- It is a trend that whenever there is a demand for commercial areas, residential get converted into a use that is more compatible to commercial utilization.

#### 5.10.5 CONCLUSIONS:

- Commercial and service functions are better located above shops of similar trades particularly so in the high density middle income group sectors where they can cash on the advantages of locations.

- In the mixed land use, commercial area can be opened up in residential area and it helps a lot to the people. But if residential area comes up in a predominant commercial area, the people living there are cut off from the rest of the society. They therefore try to shift from that place sooner or later. So residences should not be provided in commercial areas.

### 5.11.1 CONTROL:11

Residential area can't be used as commercial areas and the commercial would be only one side of the road.

### 5.11.2 PURPOSE OF CONTROL:

It was thought that there would be no frequent crossing of the road and the people would feel relaxed while shopping.

### 5.11.3 OBSERVATION:

#### Deviation from control:

- The restriction of commercial uses to only one side of the sector shopping streets has been found most difficult to enforce, particularly in the high density sectors.

- Many shops have opened up in the residences particularly opposite to the shopping street of the sector. According to a survey conducted by the administration, over 90% of the unauthorised uses were located in residential premises facing shopping streets. (See able )

#### Positive implication :

- The inadequacies of commercial land has been met to some extent.

- These shops care to the demand for comparatively



FIG. 5.15 SHOPS HAVE ALSO COME-UP ON THE  
MAIN ROAD ITSELF AND THAT TOO IN THE  
RESIDENTIAL AREA.





FIG.5.16 & 5.17 RESIDENTS HAVE OPEN SHOPS AND MOTELS IN THE RESIDENTIAL AREA TO MEET THE NEEDS OF THE PEOPLE.



lower rental commercial accomodation. (Rent also become less in commercial areas.)

Negative implication :

- There is an increase in traffic volume. It has given rise to more risk of accident.

- The stress on the existing infrastructure of water supply, electricity consumption etc. increases.

- Parking requirement fall short of originally prescribed.

- Deterioration of enviorenment in general.

- The main aim of zoning is defeated.

- Rent increases for residential accomodation.

#### 5.11.4 REASONS FOR VIOLATION:

- Since the number of shops are limited in a particular market and it has not cope up with the number of diverging bussiness that have emerged. So many shops have comeup in the residential areas.

- The house facing the shopping street is ideal for small business shop, commerce and service. So the owner sooner or later realise its potential.

- The planning itself is faulty. The shopping should be on both the sides or there should be something else in front of the market.

- The main problem is of enforcement. Since the violation is at so much place that the administration can do nothing. So it encourage violations.

#### 5.11.5 CONCLUSIONS:

The demand of smaller trade has been met. It is also suitable to everyone. The solution of this situation is very difficult. The government can't allot alternative site to all the persons as she does not have land.

#### 5.12.1 CONTROL:12

- Sector shopping centres were planned on the assumption of an even spatial distribution of shops catering for the daily needs of residential sector.

- The catagorization of trade has been made in the form of general trade, semi industrial trade and special trade. (See Table ). Each trade has a specific field and a shop is disposed of under each/any of the catagories against it's corresponding field to be used specifically for that purpose.

#### 5.12.2 PURPOSE OF CONTROL:

- To have a balance type of trades as per the planning norms at the neighbourhood level.

- To control the monopoly of the functions and thereby prices.

- To control imbalance so that people do not go elsewhere for their needs, except for within a sector and there by stop traffic generation.

### 5.12.3 OBSERVATION :

#### Deviation from control:

- There is a tendency among the people to practice the most profitable trade irrespective of the trade and the corresponding field for which it has been allotted.

- Certain specialist uses like shooter repairs, automobile repairs, building materials etc. ( Shooter and Car market in sector-21 are very famous as all facilities like repairing, spare parts, technical expertise are available at a single place. Similar is the case of old book selling market in sector-15) have found outlets in the form of specialised markets in the neighbourhood shopping centre while the shopping needs of that sector are satisfied by the adjoining sector. Therefore the sector market have influence over 4-5 nearby sectors.

#### Positive implication:

- The people can get good services in the specialised field as they are concentrated at a place,

while they can satisfy their daily needs from the other sectors.

- The bargaining power of the people also increases as they always have an option to get their things from another shop.

**Negative implication:**

- Controls in terms of the built form is similar for all the uses. But it gets modified to suit the individual requirement which create problems. Shooter and car market in sector-21 encroaches upon the space meant for parking thus causing traffic congestion and environment pollution. Similarly old book selling market in sector-15 have occupied all the spaces provided in that market.

**5.12.4 REASONS FOR VIOLATION:**

- The control is similar for all uses/trades which thus get notified to suit the individual requirements.

- The process of specifying exact uses and designs in advance of the occupation rather than letting owners built as per their own requirement causes violations.

**5.12.5 CONCLUSIONS:**

There can be no one hundred percent fool proof method of getting implemented the exact use specified as it



FIG.5.18 CAR MARKET SECTOR-21.IT CATERS TO THE NEED OF WHOLE CHANDIGARH.



FIG.5.19 SHOOTER MARKET IN SECTOR-21.

is difficult to envisage the future requirement and preferences of people for different functions.

#### 5.13.1 CONTROL:13

Convenient shopping have been provided at the four corners of the sector.

#### 5.13.2 PURPOSE OF CONTROL:

It was provided in the second phase development of Chandigarh because it was felt that the people living at the periphery of the sector had to travel more than half a kilometer for buying things.

#### 5.13.3 OBSERVATION:

##### Deviation from control:

This market is providing valuable facilities to the people and doing brisk business. Due to this unauthorised shops have also started growing in this market particularly in those sector which have developed late (i.e. sector-42 and sector-43.). While growing, this market has encroached the V3's also.

##### Positive implication :

-It has provided a lot of convenience to the people as they can buy things from these market also.

**Negative implication :**

-It is creating problem to the traffic.

-The growth is hapazard and creating slum like conditions in the area.

**5.13.4 REASONS FOR VIOLATION:**

Near the outer boundaries of Chandigarh, lower income group people lives and the requirement of these people are different and can't be fulfilled by sector shopping. Therefore non plan enterprises have grown up in these sectors. Secondly the implementing authority did not care about these illegal constructions. Therefore these shops have grown so fast.

**5.13.5 CONCLUSIONS:**

The market is successful and doing brisk business. But the sheer increase in the number of shops (mainly immobile rehries and khokha's ) have led to the problem of congestion and encroachment. It should be properly dealt with.



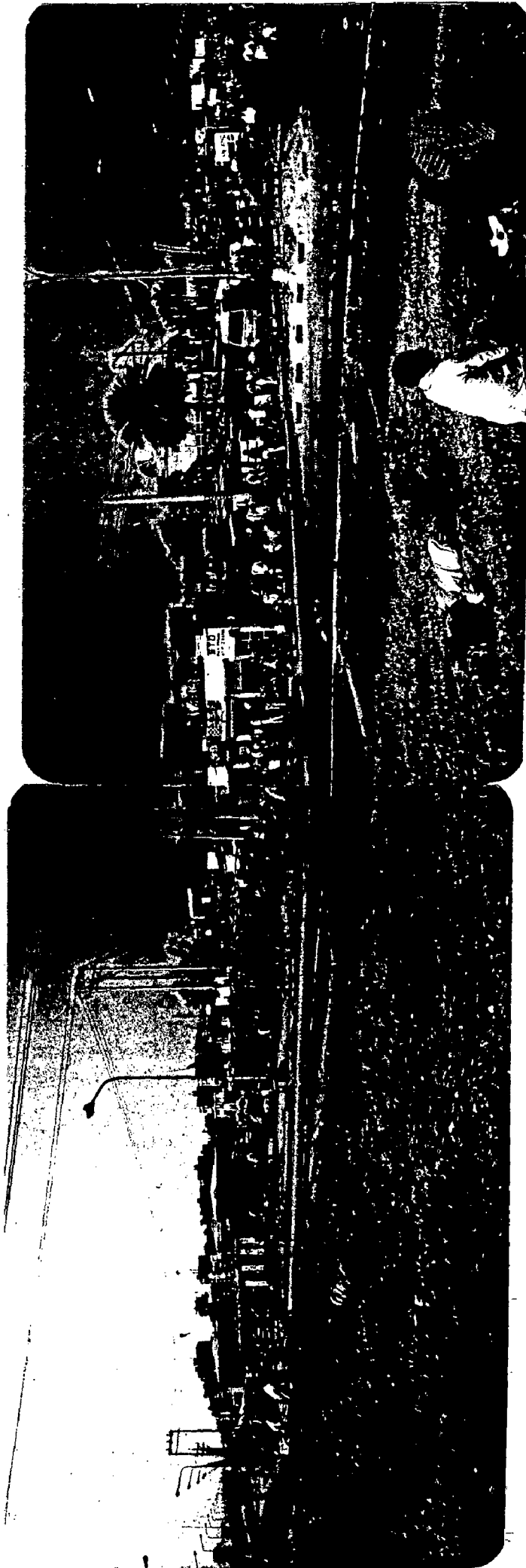


FIG. 11 CORNER SHOPS HAVE ENCROACHED THE NEARBY AREA AND NOW THE MARKET IS RIGHT ON THE MAJOR ROAD AND CREATING TRAFFIC PROBLEMS.

# Chapter-6

# ENFORCEMENT

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## ENFORCEMENT

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### 6.1 ISSUES :

Chandigarh Administration has a highly centralized decision-making structure. Most policy issues are settled by senior administrative and technical officers under the overall charge of the Chief Commissioner. As a non-elected body, none of the administrative officers is directly answerable to the public and they do not have to depend on the popularity of their policies to remain in office.

The social and executive status of administrative officers within a highly stratified society inevitably means that they have no direct experience of the life and problems of the underprivileged sections of the population. Their decisions, however well meaning, in the end amount to their perception, which is a particular class perception, of the problems and priorities of other sections of the society.

For reasons of history and the association of Le Corbusier with the creation of the city, the Architecture and Town Planning departments have retained a dominant

position in influencing major policy decisions. In addition to determining the pattern and priorities of physical development, their views are strongly reflected in the enforcement policies of the Estate Office responsible for looking after the maintenance and use of land and buildings in the city. The Estate Officer has a small staff at his disposal for carrying out enforcement operation.

The major issue in enforcement is that whether the local body should also be entrusted with the task of enforcement of development control regulations or the enforcement of development control be in the hands of development authority or the special purpose body created for this purpose.

The problem with the local body in carrying out the enforcement functions is that it is a hot bed of corruption and political interference. The works are characterised by protracted delays, the inspection staff whatever are lowly paid and have no technical qualifications. But if we take away these functions from the local body: then they would have nothing to perform.

In some cases, where the land is developed by Urban Development Authority, the rules and regulations are

enforced by them too. So, dual control by local body as well as urban development authority in notified scheme areas leads to more harassment, corruption and delays as far as citizen is concerned.

## 6.2 PROBLEMS :

(1) The local government has limited resources, there is diffusion with extensive overlapping layers of government. There is a multiplicity of authorities with the policy leadership typically weak if not ineffective. Also, the professional services of a highly qualified staff are not attached to the local government.

(2) Prosecutions in case of unauthorised constructions are not effective. The litigations are time consuming. The court injunctions are easily obtained, during which period the enforcement machinery is rendered ineffective. Even in case of successful prosecution, the fines imposed are so nominal that they hardly act as a deterrent for further commission of the offense.

(3) There is lack of proper state or central govt. support for local enforcement.

(4) There is a fiscal approach to land-use regulations. The changes are permitted in land-uses to

allow for high taxation activities like apartments, commercial use etc. at the cost of L.I.G. The local development agency of today has a commercial yielding and legalistic rather than humanitarian view of city problems.

(5) The Master Plans become outdated and disconnected from realities by the time they are completed. They never get revised due to lack of resources and political and administrative will and effort.

(6) The powers of enforcement agencies are inequitable in practice. They are used randomly for personnel benefits.

In Chandigarh, the powers to enforce the provisions of development control, has been vested in the Estate Office, under the Capital of Punjab (Development and Regulation) Act 1952.

### **6.3 PROCEDURE, POLICIES :**

According to it notices are given in cases of violation or misuses under Sections 8 and 20 of the Punjab Development and Regulation Act 1952, if it concerns leasehold and freehold property respectively. Appropriate time is given to appear in court.

### **Actions comprise in**

-Fines and subsequent compounding after submitting the revised plan of the violations which cannot otherwise be rectified.

-Cases detected within six months of the time of construction can be forcibly demolished, after which a fine of Rs. 500/- per month or a recurring fine of Rs. 20/- per day is charged from the first day of detection of violation till it exists.

-Further actions in case of decisions by courts can result in redemption of the site and subsequent eviction.

-Provision exists for appeal in higher courts if appellant is dissatisfied by the decision of the lower courts.

### **Organisational Aspects**

- There are building and use violation departments.

- There is no central record and hence no cooperation between the two departments. A building having both types of violations stand chance of being resumed twice which is legally wrong.

- Enforcement machinery is understaffed, incompetent and non-technical people. So, they cannot enforce the controls effectively.

Plans are sanctioned according to rules but most of the interior violations like excess coverage, building of mezzanine, building of an extra storey etc. are done during the course of construction and are thus deliberate. As these can be compounded after submitting the revised plan, the owners simply go on with the construction as fines are very nominal as compared to the benefits thereby accrued.

#### 6.4 SUGGESTED CHANGE:

The need of the time is to devise an enforcement machinery which would be more effective, free from corruption and efficient than the present one.

(1) The enforcement of controls should be entrusted to local bodies and not to the special agencies. The local bodies should appoint Town planning officers so that planning objectives are not lost.

(2) The structure and grade of pay for the enforcement staff should be revised and upgraded so as to attract better qualified persons for these posts. Special training programme be organised for these personnels.

(3) In larger cities, the enforcement machinery should be decentralised and adequate powers be given to the zonal offices of the local bodies so that they are not only easily accessible to the citizen but also are better placed



in regard to the detection of unauthorised building activity.

(4) The development control rule should be made simple, straight forward and concise. The overlapping jurisdiction and inconcistancies as between the various enactments and rules should be eliminated.

(5) Care to the problems of poor people should be taken while framing a control.

(6) A periodic review of all that is formulated and what is enforced ought to be done. The rules and cotrols should be changed according to the need otherwise they would fail.

Chapter 7

# RECOMMENDATION



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## RECOMMENDATIONS

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Commercial areas at a particular place create disparity in the form of difference in land values. Therefore the development control in urban planning assumes significance in the contexts of commercial areas. Development control also reflects governments policy of whether it is for the masses or is based on achieving form and monumentality.

Development control of any city always follows from a concept. Hence first of all we have to judge a control against the concept as to what were the objectives that it start with. We should also consider the socio-economic changes that the city has gone through while developing. In the light of these points recommendation should be made.

Chandigarh is a consumer city, with the limited purchasing power of the people, thus is able to sustain the trade and commerce upto a certain level only ( 60 per cent of the population employed in administrative capacity). The informal activity in this city is growing much more rapidly. This is because these can subsist very well on the

limited purchasing power of most of the population. The formal activity has grown but only in direct proportion to the growth in population of the city.

The concept of development of Chandigarh bases the commercial functions in the city centre and along the major V2's besides a hierarchy of commercial areas. It is hence exploitative in the sense that all activities cannot be concentrated in the form. Hence, the problems of associated activities and specialised markets emerge.

The development control should incorporate the growth and development of the city on the lines dictated by not the concept alone but by the changing function of the city.

The concept of violation ought to be redefined. Basic is that a range of activities need to be accommodated. Hence form should be flexible enough and not just be an envelope with the street picture to be the only consideration. Thus the growth and development particularly the range of diverse activities allowing more productive use of space with respect to employment generation be encouraged.

## 7.1 GENERAL FRAMEWORK FOR RECOMMENDATION:

The general policy framework for recommendations would try solve the existing problem of controls and reviewing the policies for controls made by the government for new areas of development in the light of recommendations thus made.

- Co-ordination should be streamlined between the planning authority and the enforcement staff at all stages to have the least violations.

- Violations besides being deliberately for economic gains, are also often indicative of the needs of the people. Hence the controls/bylaws should be revised at definite intervals of time.

- Flexibility in controls, wherever provided should be incorporated into the rules.

- Enforcement ought to be made effective by such measures as :

\* Stringent penalties

\* Threat to demolition and not compounding coupled with site resumption and eviction of tenants who are violating.

\* Speedy detection and prompt action during the construction stage itself, rather than involving the court

with notices and court proceedings which take time.

\* If enforcement can not be made effective due to practical difficulties to do things, designs be made as inviolable as possible, so that enforcement having less to enforce.

#### 7.2.1 CONTROL:1

According to Punjab New Capital (Periphery) Control Act 1952 the development have been controlled within a distance of 5 miles from the outer boundry of Union Territory.

#### 7.2.2 DEVIATION:

The state government itself has encroached the periphery of Chandigarh. Panchkula in Haryana and Mohali in Chandigarh have been developed. SAS Nagar in Punjab is being developed as an industrial centre. Similarly Panchkula is also developing as a market centre. Since these cities don't have other facilities like educational, commercial and recreational. So they have to depend on Chandigarh. It has led to increase in stresses on the amenities of it. This has altered the functional definition of Chandigarh.

### 7.2.3 RECOMMENDATION:

#### For Existing Situation:

Since the peripheral control act has not been implemented strictly therefore this problem has arise. The state government itself has violated the rule. It is also visualise that growth of slums is due to high land value in the city. At present we can't demolish the unauthorised colonies and other cities as Mohali and Panchkula but we can limit their growth by authorising the existing colonies and then restricting their further development. These colonies should be provided with all the infrastructure facilities so that they would not create problem to the main city.

#### For Future Development:

Firstly the periphery of any city should be under strict vigil of the concern authority. No unauthorised development should be allowed. It should be nipped into the bud. If the authority itself wants to develop an area, proper infrastructure should be provided.

Secondly enough space for the lower income group people should be provided within the city itself. It will keep the rental value within affordable limit inside the

city and would discourage the people to live on the outskirts of the city.

#### **7.3.1 CONTROL:2**

- Mode of construction to be an R.C.C. framed structure with a fixed bay size. ( Bay size of 17'3" x 104'11" in sector-17 and 17'3" x 97' in sector-34)

- Two such units can be used as a single shop.

- The whole construction is to be finished in one full operation.

- In the city centre sub divisioning of shops is not allowed.

#### **7.3.2 DEVIATION:**

There is a violation of use of shop as the requirement of different trade is different and the size of shops are not according to the need therefore intensive subdivisioning of module has taken place.

#### **7.3.3 RECOMMENDATION:**

##### **For Existing Situation:**

- With present state of political indecision about Chandigarh; the concentration of three times offices of government and the related activity, the Administration



cannot strictly enforce the bay size constraint, for it is in response to the need. No one can do anything to ease the situation; hence the present situation continues.

- The situation can ease somewhat if Punjab and Haryana governments shift their respective offices to Mohali and Panchkula.

- The situation can also ease with the growth of the city and emerging of different centres to cater to the needs of the region.

- As subdivisioning shall inevitably occur whatever be the size of the shop allotted, hence within the base framework of the government policy, the owners be allowed to subdivide or expand their shops as governed by the market forces and as per needs with time.

#### **For Future Development:**

- The module designed to be allotted ought to have the inherent flexibility within the system to allow for subdivision into smaller shops or combination into bigger shops as per need.

- At the same time, the requirements for the smaller shops (in the form of associated services catering to the office requirements), need to be worked out, along with their system of disposal so as to have least

subdivisioning. Thus we should have a range of modules instead of a single 2-bay size.

#### 7.4.1 CONTROL:3

- An advertisement panel of fixed dimensions and at a fixed height from the ground floor with the size of letters specified is provided for each shop in between the bays only on which the shopkeeper can advertise.

- No hoardings etc. is allowed anywhere else or any part of the face of the buildings.

- No sky sign or neon signs are allowed.

#### 7.4.2 DEVIATION:

- Shops/ offices at upper floors do not have space to advertise.

- Smaller shops on account of subdivisioning of bigger shops have come up in the basements as well as on the ground and first floors. Since they have no space to advertise, advertisements have come up all over the balconies and columns on ground and upper floors.

#### 7.4.3 RECOMMENDATION:

For Existing Situation:

- The advertisements, if pasted on the wall of the

house, boundry walls, in the form of hoardings near the road, banners across the road cause general deterioration of the city environment. The advertisements particularly near the road are one of the cause of accidents as they either attract the people or make a crossing blind in the form of hoarding etc. Therefore strict enforcement ought to be done for advertisements at places other than specified.

- Advertisement panel for upper floor shops needs to be devised.

#### **For Future Development:**

- The places of advertisement should be fixed but there should be enough flexibility to accomodate different types of panels. The control about the letter size, dimension of panel, restriction of using neon sign should altogether be dropped because it leads to monotony.

#### **7.5.1 CONTROL:4**

All curtain walling and glazing to be of prescribed standards. This fixes the glazing pattern of shop fronts and also the glazing design of shops and offices on the upper floors.

- Under the architectural control of the buildings the grid of columns and bay size are fixed.

- Use of material and steel shuttering pattern for all R.C.C. work of all external facade is specified.

#### 7.5.2 DEVIATION:

- Subdivisioning of the bay-size has led to the violation of the shop-front design.

- Show-window is being used as a sale booth, instead of a display space, or subdivided or is sometimes used for installing air-conditioners.

#### 7.5.3 RECOMMENDATION:

##### For Existing Situation:

The fixing of grid of columns, bay size, shuttering pattern, glazing etc., though gives the city centre a clean look but it has eliminated the cosyness of the market. Since the bay size of shops are fixed, the shopkeepers have manipulated it according to their need. So the control should be such that it allow the shopkeepers to make changes.

##### For Future Development:

Different type of bay sizes should be provided at the city centre as it incorporate different types of shops at the same place.

### 7.6.1 CONTROL:5

- Basement to be used only for the purpose of records, storage, godowns, lift mechanism etc.

- It is not to be made into habitable spaces and thus sewerage and water connection are not to be provided.

- It has not to be partitioned.

### 7.6.2 DEVIATION:

- Basements are extensively partitioned to be used as shops, restaurants and for service functions as tailoring etc. and as associated functions for offices like photostats etc. Many basements having 8-10 shops.

- The display panels for functions in the basements are littered all over the ground floor space thus violating the advertisement control orders.

- The enforcement staff is unable to check as is evident from the persisting nature of functions and the very scale of activity.

### 7.6.3 RECOMMENDATION:

#### **For Existing Situation:**

The existing situation defies the solution due to the very scale of activity which renders the enforcement

machinery ineffective to implement the provisions of the control

The existing situation has certain peradoxes, which makes the solution by the authority difficult:

If you allow uses, they would demand facilities like the sewerage connection etc. like the rest.

If you disallow uses as is the case at present, the uses would come nevertheless, so long as there is a room to violate and need coupled with locational advantages.

**For Future Development:**

- Either the basement should be scrapped or made common for packing or else should be designed consciously for shopping.

- If at all the decision is taken to have basement and for such uses only as records, storage etc., it should not be given independent access from outside. It should be accessible only to the users from upper floors and they be made accountable in case it is being used for purposes other than specified.

**7.7.1 CONTROL:6**

- 12' wide verandah space is to be left on the ground floor to provide protection to the pedestrians

against weather.

- 6' wide balcony space to be left on all sides in case of upper floors.

#### 7.7.2 DEVIATION:

- The balconies are encroached upon and covered to be made part of the office space.

#### 7.7.3 RECOMMENDATION:

- The individual designs for show-windows ought to be allowed, as per the requirements and functions of each shop, within the overall frame work of control.

- The control of balconies to be provided on all floors as purely an aesthetic consideration, not based on function, need or orientation aspects has become redundant and should be modified for the development in future.

#### 7.8.1 CONTROL:7

- The control specifies about the setbacks, building lines from V2 Road, Maximum height, Number of stories, facade character, and overall building form.

- Land was sold with standard bay as a unit.

- Specialised markets of wholesale uses were visualised here even though the exact nature of functions could not be ascertained at the very beginning.

### 7.8.2 DEVIATION:

- Bulk storage, service and handling functions, required the provision of courtyards. These have been misused.

- These have been totally or partially observed; servicing and manufacturing functions have come up; marble cutting grinding, wholesale and retail activity as also furniture manufacturing has come up.

- There have been violations of change in use against the use that the shop was allotted for eg. in sector 26 fruit, vegetable and grain market, the godowns have been put to use as regular shops, while the storage is being done on open platform with temporary structure above.

- There have been sky-signs which are the violations of the advertisement control order

### 7.8.3 RECOMMENDATION:

#### For Existing Situation:

The authorities are on the process of reviewing the policies of strict enforcement of norms relating to excess coverage of courts. The negotiations are on for settlement with owners in court to allow them to operate after they pay some amount to the authorities. Hence the



policy is along right lines.

**For Future Development:**

The authorities in the next sector to be developed along V2 (Sector 8, station university Road), as in case of other V2's has done away with the concept of Rear courtyards, as the nature of functions began to get clear during the process of growth of the city; hence the policy change is along right lines.

**7.9.1 CONTROL:8**

Residences were zoned to be above shops in sector shopping streets.

**7.9.2 DEVIATIONS:**

- The flats above the shops are being used for commercial and service functions.

- The flats are rented out to members of comparatively lower income groups while the owners live elsewhere; the characteristic is typical of middle income, high density sectors.

### **7.9.3 RECOMMENDATION:**

#### **For Existing Situation:**

The administration has effected a policy change to permit such change in use. A policy was made, wherein the later sectors to be developed, the designs for shopcum-flats were made such that these were served independently from the back side.

#### **For Future Development:**

- In second phase sectors, the administration has adopted a policy of providing office instead of flats above the shop to cater for the growing need for this commercial use.

- Chandigarh's spatial form has been based on the unifunctional separation of land uses; while the mixed land uses have emerged throughout the city; several attempts have been made to relocate their uses to their respective zones but without much success.

- Rigid segregation of uses has been most difficult to enforce as seen from the land use violations along the sector shopping streets, besides the mixed land use throughout the city.

### 7.10.1 CONTROL:9

- Control specifies that residential use be zoned in front of the shopping street; while commercial use is restricted to one side of the sector shopping street; thus the control envisaging segregated use-zoning.

### 7.10.2 DEVIATION:

- The private residences in front of the sector shopping street have been converted into commercial establishments.

- 90% of the total unauthorised uses in the city have been located here.

- Shops have opened at the back of the shopping streets serving the residential areas.

### 7.10.3 RECOMMENDATION:

- Private residential use ought not to be zoned in front of the sector shopping street to check speculation and misuse.

- The inadequacy for commercial use is to be met by administration's policy of providing more number of smaller shops in the form of booths in second phase as also the shop-cum-offices in place of shop-cum-flats in the first phase sectors.

- There is need for mixed land-use zoning with shops interspersed among residences in Indian conditions. The Administration in its policy for second phase sectors is planning shops dispersed at four corners of the sector

#### 7.11.1 CONTROL:10

- Sector shopping streets were planned on even spatial distribution of shops to meet the daily needs of the residential sectors.

- The use for each shops and its design each use carrying a specific price.

#### 7.11.2 DEVIATION:

- The shops meant for semi-industrial use (lesser price and separate design) have been put to regular uses, while the semi-industrial uses have emerged at other locations.

- Certain specialised uses like the scooter repairs, building materials, hardware to have found separate markets in the neighbourhood markets while their daily needs are being satisfied by the adjoining sector.

#### 7.11.3 RECOMMENDATION:

- The scooter repair and auto repair functions ought to be shifted to the industrial area, which is the present

policy of the Administration.

- These should be allotted space at the back of the shopping streets, wher they can operate in the open, not interfering with the traffic and encroaching upon the land meant for other purposes. Here they would cater better to the local needs.

- Administration should specify, which use can not be practised at a particular location, rather than what is to be practised at each location, which is difficult and impractical to enforce.

## CATEGORISATION OF TRADES

### GENERAL

Artwares, Bakery products and confectionary goods, Books, stationery, crockery and utensiles, domestic appliances and gadgets, electrical goods, furniture, general merchants, hoisery, ice-cream and milk products, medicines, photographic goods, shops, textiles etc. i.e. involving Display/Sale.

### SEMI-INDUSTRIAL

"Shall mean trades involving manufacture, repair, servicing processes, employing not more than ten workers and/or requiring connection not exceeding 5 H.P."

This includes Aerated water, Bamboo and cane products, furniture, iron trunks, sports goods, radio assembling and parts, rubber stamps, photo and mirror frame, musical, drawing instruments, sewing machines, assembling and repairs, hoisery including knitted garments, shoes, small domestic appliances and gadgets, cycle repairs, book binding etc.

### SPECIAL TRADES

Bakery, building material, coal depot, atta chakki, excise vends, grain (wholesale), halwai, kabari, fruit and

vegetables, tents, scooter repairs, restaurant rinting  
press, meat, fish, poultry etc,

### POPULATION GROWTH

Year	India	Chandigarh	Sex Ratio	Literacy Ratio
1961	43,56,12,398	89,324	N.A.	-
1971	54,81,69,652	2,57,251	756	-
1981	68,51,84,692	4,22,841	775	66.15
1991	84,43,24,222	5,75,829	810	79.87



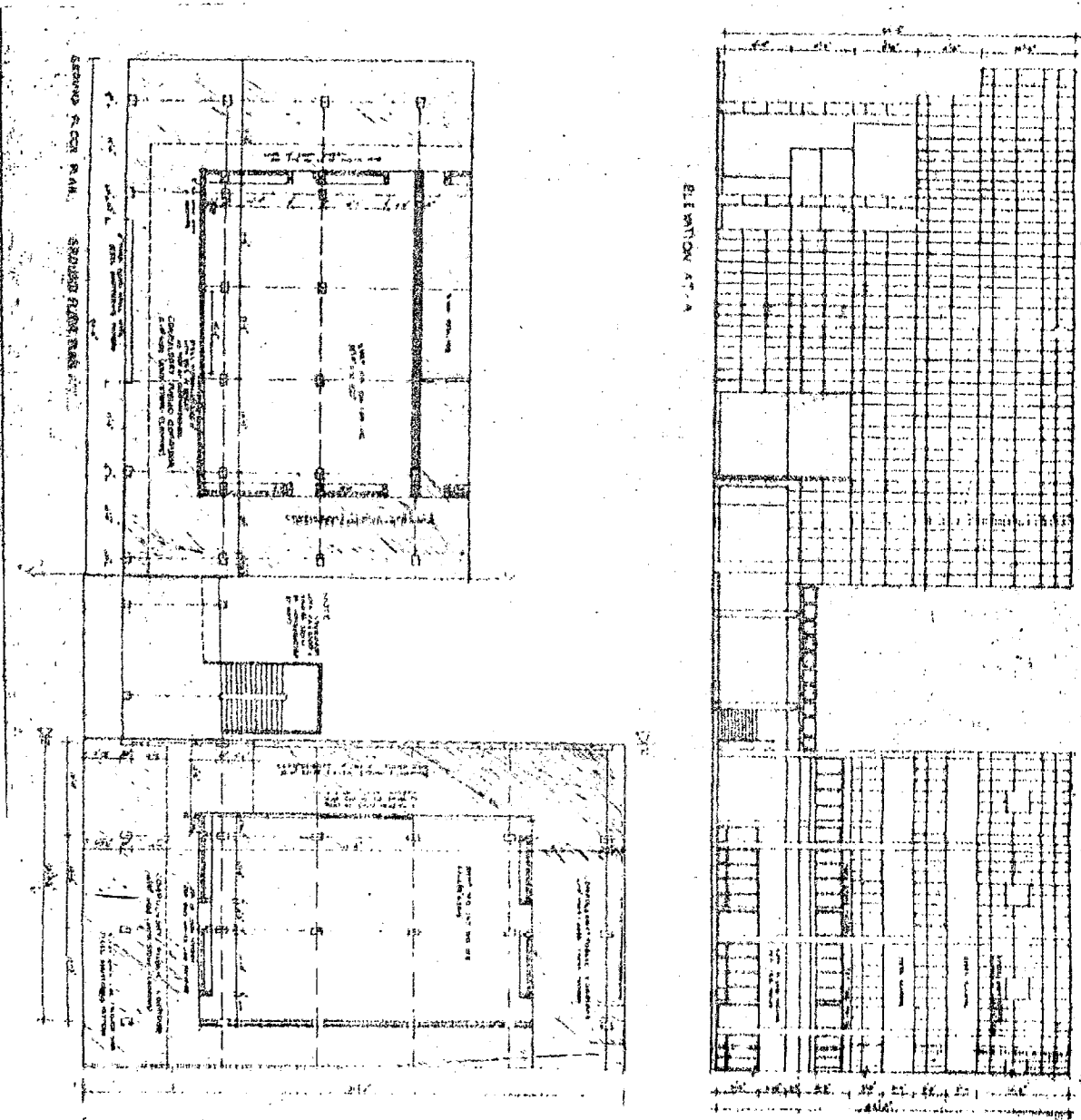
**RESULTS OF 1987 SURVEY FOR MISUSE IN RESIDENTIAL USE**

USE	NUMBERS	SECTORS
1. DOCTORS CLINICS NURSING HOMES	153	18, 19, 20, 21, 8, 7, 28, 33, 34, 35 11, 16, 15, 23, 10, 22, 37, 38, 40
2. PROPERTY DEALERS	53	18, 20, 21, 27, 19, 8, 7, 22, 16, 23
3. SCHOOLS	163	9, 8, 20, 21, 7, 32, 35, 27, 28, 19, 35, 33, 2, 11, 15, 16, 23, 25, 36, 38, 22, 37, 18
4. PRINTING PRESSES	28	20, 21, 27, 19, 7, 10, 15, 16, 22
5. COMMERCIAL SHOPS	133	20, 21, 18, 19, 27, 28, 21, 11, 15, 16
6. OFFICES	90	4, 5, 7, 8, 21, 34, 9, 19, 32, 33 34, 35, 2, 3, 18, 16, 15, 36, 22, 38, 18
7. PRIVATE COMPANY OFFICES	37	4, 5, 9, 19, 28, 33, 21, 33, 34, 35, 18, 16, 10, 22, 15, 36, 37, 38
8. GUEST HOUSES	28	2, 17, 15, 36, 10, 15, 9, 39, 19, 21, 34, 19
9. ARCHITECTS	54	19, 21, 27, 28, 8, 7, 18, 11, 10, 15, 23, 36.

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12. Malhotra, D.D. - Control of Urban Building Activity- September 1980.
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  16. Sharma R.C. - India's Urban Land Policy and Development Finance (1988).
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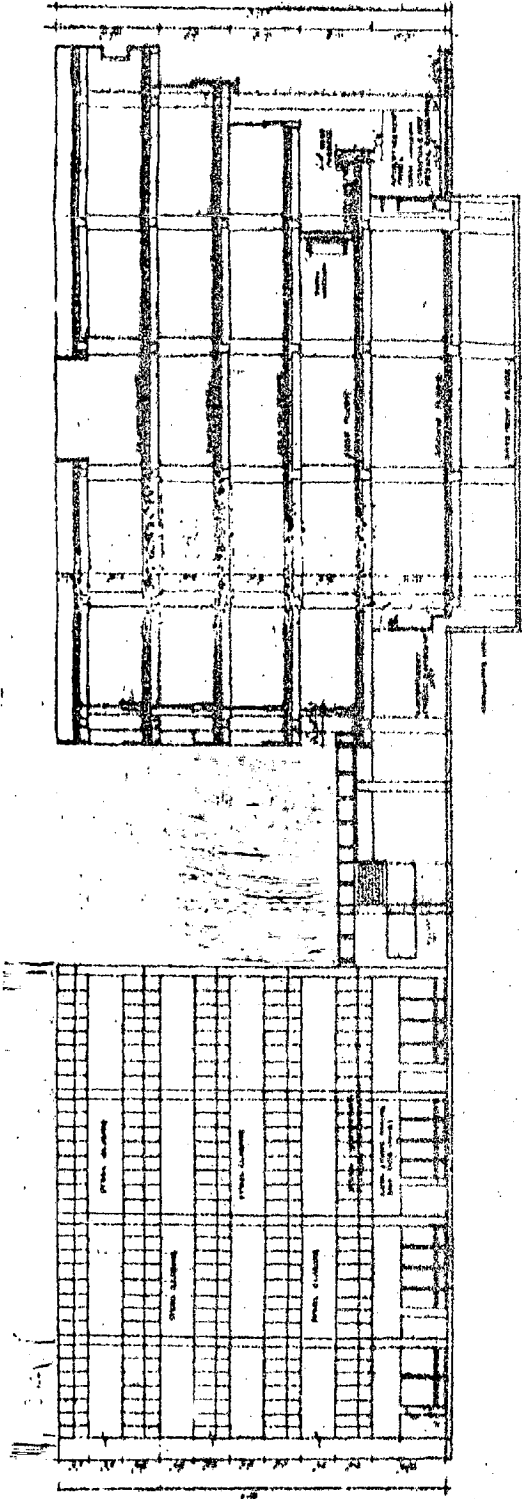


Architectural  
Control  
Sheet

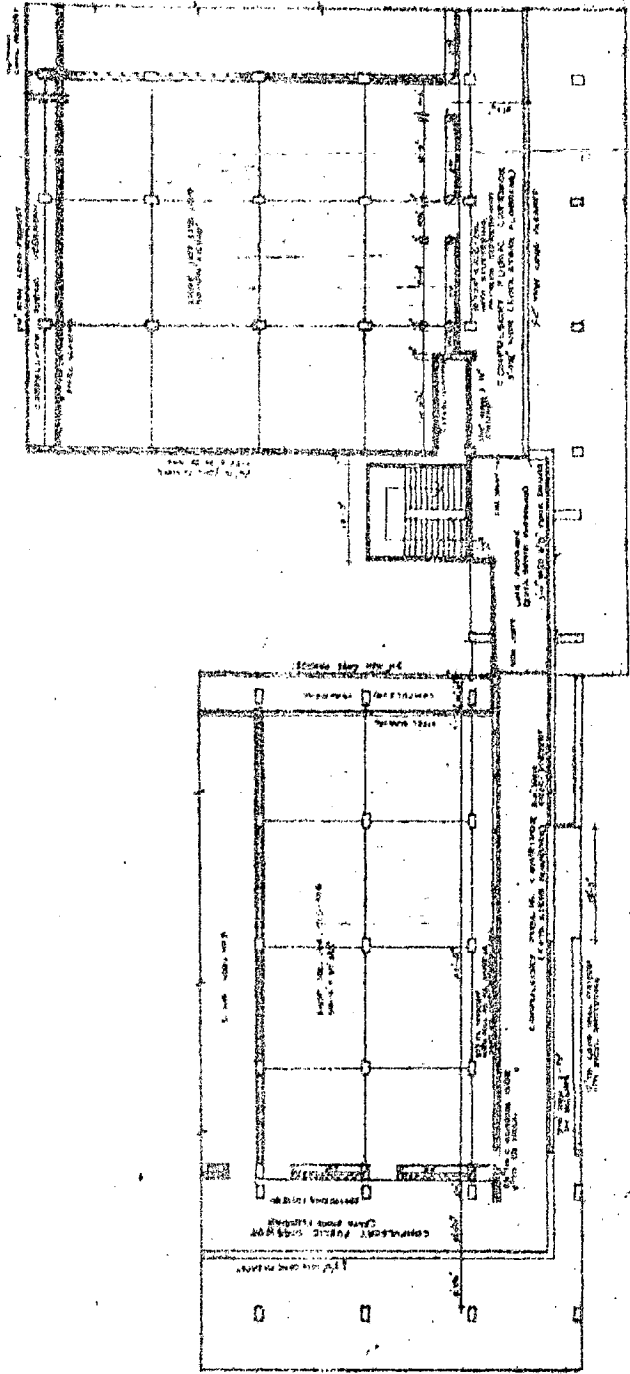
<p>DEPARTMENT OF ARCHITECTURE</p>	<p>1. The student is to submit a report on the evaluation of development controls with focus on commercial development of Chandigarh. The report should be in the form of a paper and should be submitted to the department of architecture. The report should be in the form of a paper and should be submitted to the department of architecture. The report should be in the form of a paper and should be submitted to the department of architecture.</p>
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# EVALUATION OF DEVELOPMENT CONTROLS WITH FOCUS ON COMMERCIAL DEVELOPMENT OF CHANDIGARH

Plan: ARCHITECTURAL CONTROL FOR SHOPS  
Submitted by: N. K. CHAUHAN Guided by: R. CHANDRA



SECTIONAL ELEVATION AT E-W



FIRST FLOOR PLAN