

# City Development in Israel

Harry GREENBERG, Israel

**Key words:** Re-survey, Re-evaluate.

## ABSTRACT

City can be defined as an inhabited place (from Latin: civitas), with multipurpose defined areas, many buildings, a large net of infrastructure and a huge net of roads. The most significant contemporary function is city planning. The planning of cities has outgrown the limits of the jurisdiction of all municipal authorities.

The new "Law for planning and construction" in Israel dates from 1965 and reached 53 amendments.

In Israel there are 3 levels of "Commissions for planning and construction":

- The national commission
- 6 regional commissions
- The local commissions, some 300.

Ad hoc commissions are approved by the parliament in special cases for defined issues.

The jurisdiction of the commissions is defined and limited. Planning a new city is of national interest and approved by the government.

### **Choosing the preferred alternative**

The process of choosing a preferred alternative is rather complex in the overall planning. To reach a decision regarding the preferred alternative, different alternatives are drafted.

### **Matrices Origin and Destination (Matrix for every alternative)**

The matrices provided on one hand information on the exact spread of work places, and on the other hand information on the housing of employees.

Residential area and engineering infrastructure

The planning included checking the supply of housing in the core of the metropolitan, size of apartments, future demands suited to the characteristics and composition of the population, and projected income levels.

### **Quality of life and open spaces**

The plan classified all the areas suitable for the well-being of the population, their leisure and past-times, dividing spaces between residential blocks and so on.

### **Transport system.**

A comprehensive study of the transport system is carried out.

### **Computerized Assessment Model**

The planning utilized an assessment model with multi-variables which enables the classification of factual data which we wish to address and using Multi criteria Analysis of Land Use Alternatives method.

### **The Preferred Alternative**

We can sum up that the plan rationalizes the development of the District within the framework of the metropolitan to ensure efficiency in utilization of land and existing and planned infrastructure and it ensures the quality of life worthy of the future population.

**Development of the Preferred Alternative (The Plan)** is determined

Principles of Open Space Policy **are defined.**

**Local Master Plans and Detail Master Plan** fulfills the requirements of the

District Plan.

### **CONTACT**

Harry Greenberg  
Harry Greenberg Survey Co. Ltd.  
4 Tel-Hai str.  
Holon  
ISRAEL  
Tel. + 972 3 505 5187  
Fax + 972 3 501 2283  
E-mail: [hgsurvey@netvisin.net.il](mailto:hgsurvey@netvisin.net.il)

# City Development in Israel

Harry GREENBERG, Israel

## 1. INTRODUCTION

City can be defined as an inhabited place (from Latin: civitas), with multipurpose defined areas, many buildings, a large net of infrastructure and a huge net of roads.

A city cannot operate without a government of some kind that must render certain services. The most common functions that must be performed in every city are the environment and health services, education, local jurisdiction, construction, public-utility services, welfare services, markets, museums and parks and so on.

A city council inevitably takes an interest in the economic, cultural and social well-being of the city that it governs. City development is only one important function among many others.

The most significant contemporary function is city planning. The planning of cities has outgrown the limits of the jurisdiction of all municipal authorities.

The new "Law for planning and construction" in Israel dates from 1965 and reached 53 amendments. It consists hundreds of pages with thousands paragraphs and many juridical interpretations. In addition, we find related laws concerning national parks, cadastre, agriculture land preservation, archeology, railway, transport and environmental. Furthermore, each municipality has its own [by-laws] rules and regulations. Although we see that planning (and construction) requires significant efforts, Israel is developing dynamically.

Israel is a geographical strip 500 km. long in south-north direction and on average of 60 km. wide in east-west, i.e. an area of 30,000 sq. km. The population in Israel is 6M people. In U.S.A live about 270M people per 9,630,000 sq. km, in U.K.59M per 244,101 sq. km, in Germany 82M per 357,000 sq. km, in France 59M per 544,00 sq. km. Those figures permit a better understanding of the subject of this paper and the figures mentioned.

In Israel there are 3 levels of "Commissions for design and construction":

- The national commission
- 6 district commissions
- The local commissions, some 300.

Ad hoc commissions are approved by the Kneset - Israel's parliament, in special cases for defined issues. The procedure of design and decision in this case is faster and efficient, although legal rights of neighbors may be violated, misjudgment is more often and mistakes may occur.

The state and each district, city or location must have a master plan. The national commission

decides upon major national facilities such as a new harbor or airport, national high way, new city or electrical power station.

The jurisdiction of the commissions is defined and limited. The state and each region, city or location must have a master plan. Planning a new city is of national interest and approved by the government. The first city council is appointed until a first election occurs in the city.

Apriori and according to law, every plan must be signed by a surveyor and his signature is valid for 6 months. Afterwards the plans have to be updated. A survey must include every significant feature; a small well can cause a lot of trouble. Research of ownership in the Land Registry Office is mandatory. Survey of ownership and borders as defined by the block registration settlement, examination of existing private surveys and surveys in the vicinity are mandatory and prior to any planning. Borders are determined in new accurate coordinates systems. Survey data is computerized in G.I.S. standards obliging planners and designers to respect and adhere to these standards. National use of G.I.S. unique standards in widespread government offices, municipalities, electricity and phone companies combined with rules and regulations can contribute to common platform and language. The surveyor has become the integrator of planning disciplines decision-makers.

### **1.1 Choosing the Preferred Alternative**

The process of choosing a preferred alternative is rather complex in the overall planning. To reach a decision regarding the preferred alternative, 4 alternatives were drafted. The planning task tested various methods that are acceptable in planning of this sort and choused a multi-variable system. Taking into account that every assessment is in some part based on:

- Partly normative data
- Data that cannot be measured precisely
- Data whose interpretation depends on the subjective views of the assessor.

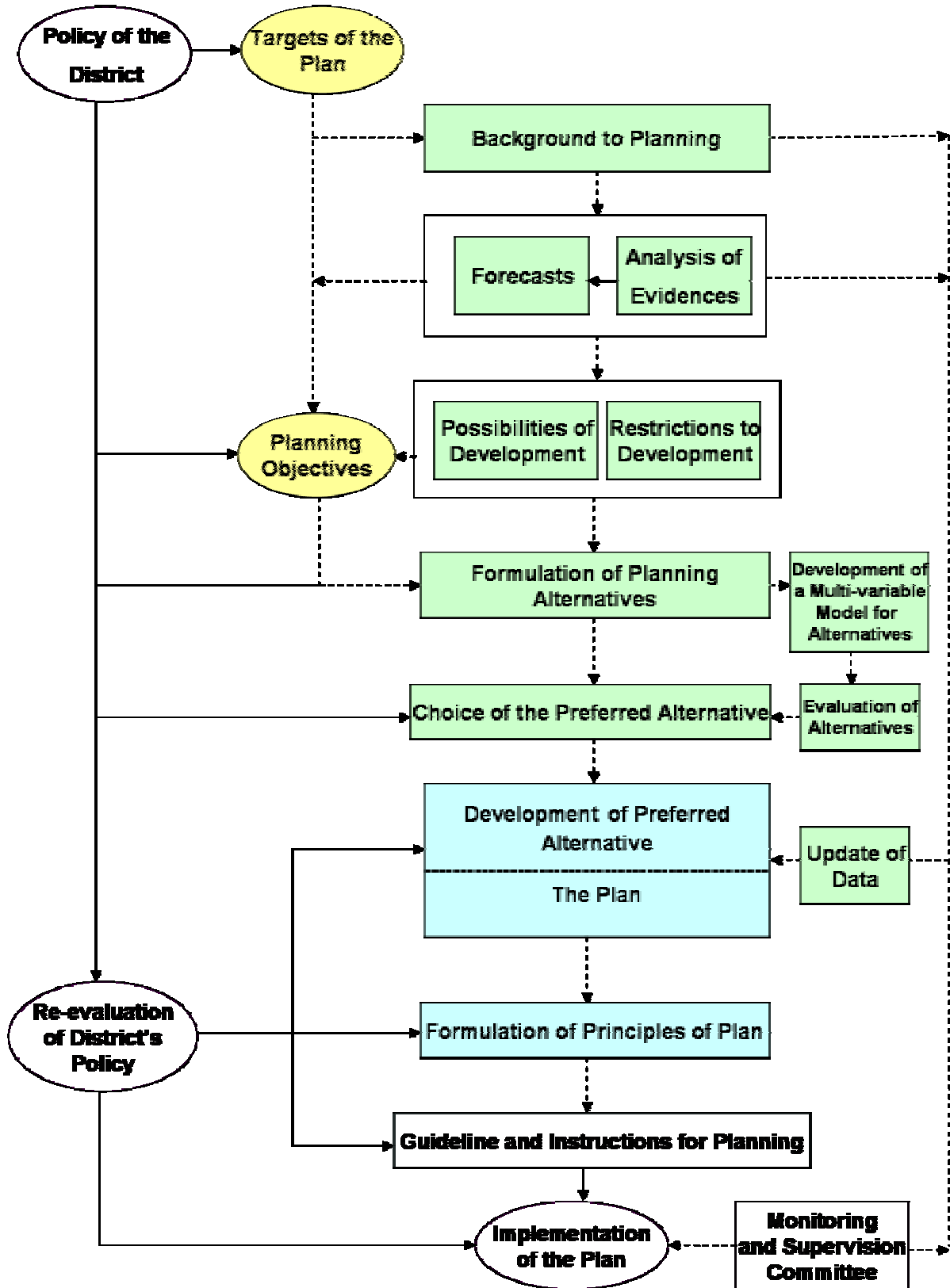
Some work that comprised an additional and detailed processing of demographic and economic data was carried out, in order to create the optimum tools to check alternatives. The work executed deals with the following systems:

- The economic, social and demographic system
- Residential and infrastructure system
- Quality of life
- Transport.

### **1.2 Matrices Origin and Destination (Matrix for Every Alternative)**

The matrices provided on one hand information on the exact spread of work places, and on the other hand information on the housing of employees.

# PLANNING PROCEDURE



### **1.3 Residential Area and Engineering Infrastructure**

The planning included checking the supply of housing in the core of the metropolitan, size of apartments, future demands suited to the characteristics and composition of the population, and projected income levels.

### **1.4 Quality of Life and Open Spaces**

The plan classified all the areas suitable for the well-being of the population, their leisure and past-times, dividing spaces between residential blocks and so on.

### **1.5 Computerized Assessment Model**

The work utilized an assessment model with multi-variables which enables the classification of factual data which we wish to address. Multi-criteria Analysis of Land Use Alternatives - this method allows the connection between factual data and opposing interests and perceptions; different policy and the presentation of normative information which is unique in its simplicity. The process is based on the assessment by means of systematic measurement of the advantages and disadvantages of each alternative. The process ended with the recommendations of the planners for the preferred alternative for the steering committee.

The assessment included several stages:

- Giving weight to a group of purposes
- Definition of the criteria's
- Giving weight to criteria's
- Determining the marks for choosing the achievement of the target according to the criteria.

### **1.6 The Preferred Alternative**

After examining four alternative plans, the preferred alternative (the plan) was chosen in co-ordination with the works committee. The alternative is a combination between two alternatives and is defined as "Alternative Eastern City". The assumption is that the Central District will absorb most of the increased population. There will be a concentration of jobs in the TEL-AVIV metropolitan and other towns in a number of dense central and satellite locations. The main principles of the chosen alternative are:

- Concentrated and dense building in all the towns of the metropolitan District especially TEL-AVIV - avoiding infringement of agriculture and rural areas. All this is done in co-ordination with the master plans of the towns.
- Development of the east of the District of about 120,000 people.
- Continued development and reinforcing of the metropolitan core with unique housing and employment plans.

- Increase some urban areas to large town status.

We can sum up that the plan rationalizes the development of the District within the framework of the metropolitan to ensure efficiency in utilization of land and existing and planned infrastructure. Furthermore, it ensures the quality of life worthy of the future population of the area.

### **1.7 Development of the Preferred Alternative (The Plan)**

At the development stage of the Preferred Development (The Plan) the planning range was determined at the year Israel would have a 7 million population. With the progress of work, this was extended to 8 million. This stage included a full up-date of the background to planning (up to 1997), forecast and estimate of demand. In view of the analysis of the findings and the forecasts the principles of the plan were formulated and guidelines determined for the planning of the stages of implementation.

### **1.8 Introduction of Principles of Open Space Policy**

The total open areas of TEL-AVIV and the center are limited. A third of the central District including the periphery is built-up areas.

As with very metropolitan area the suburbs are under the great pressure for development that include pressures not only housing and employment, but also the infrastructure to service the metropolitan. In Israel these pressures are today with the background of the crisis in agriculture which weakens the defense of agricultural land. This land is the majority of open spaces in the District.

## **2. THE PLAN INSTRUCTIONS**

### **2.1 Name of the Plan, Application, Borders and Documents**

All the plan documents constitute an integral part thereof and will be read as of one piece.

### **2.2 Definitions**

Every term in the plan is defined.

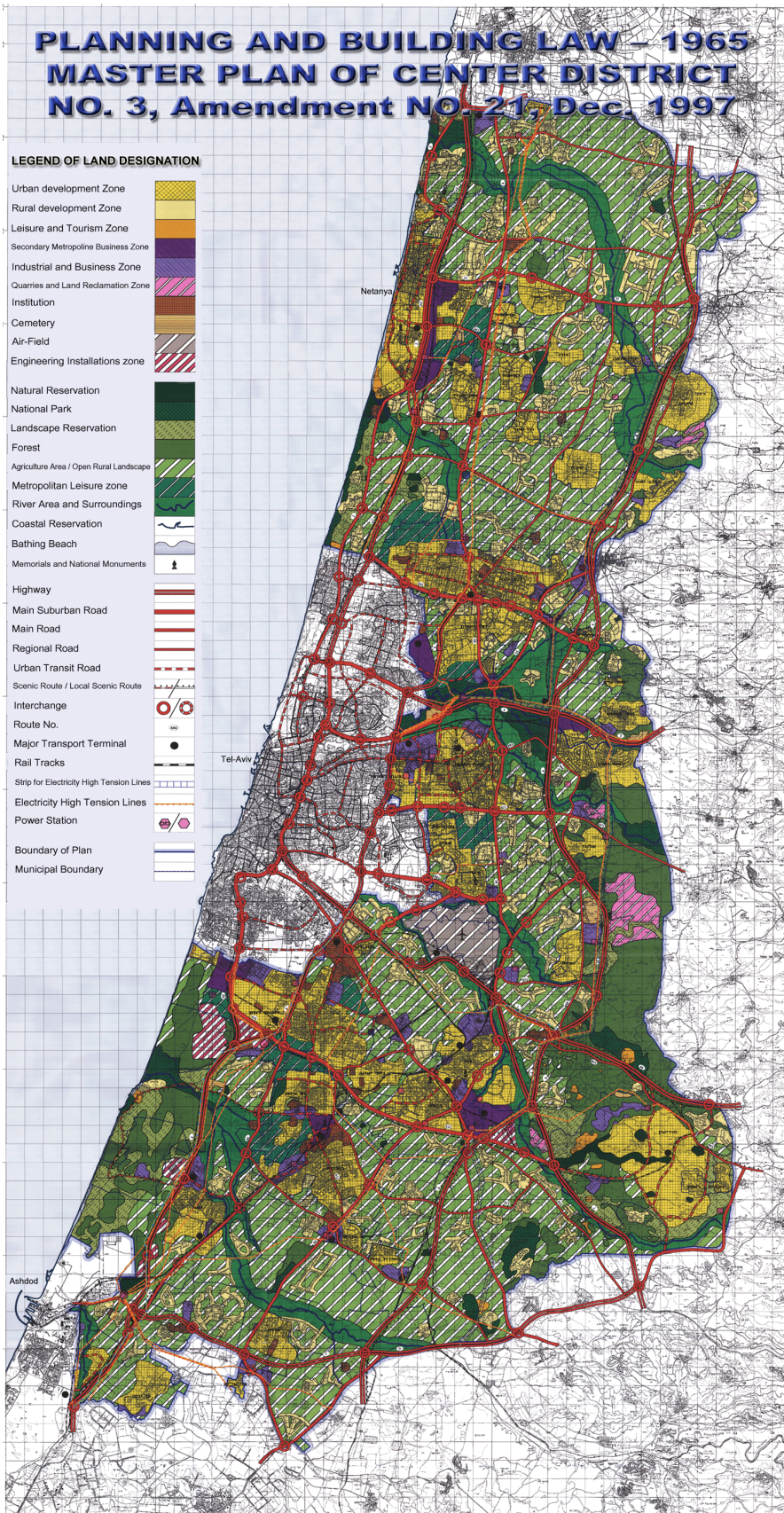
### **2.3 Purposes of the Plan**

- Determining the conditions required for execution of national master plans within the district borders.
- Determining the conditions, the instructions and the directives for drawing up local master plans and detailed plans.
- Creating a system of land-use assignments and the road system and infrastructure plotting.

# PLANNING AND BUILDING LAW – 1965 MASTER PLAN OF CENTER DISTRICT NO. 3, Amendment NO. 21, Dec. 1997

## LEGEND OF LAND DESIGNATION

- Urban development Zone
- Rural development Zone
- Leisure and Tourism Zone
- Secondary Metropole Business Zone
- Industrial and Business Zone
- Quarries and Land Reclamation Zone
- Institution
- Cemetery
- Air-Field
- Engineering Installations zone
- Natural Reservation
- National Park
- Landscape Reservation
- Forest
- Agriculture Area / Open Rural Landscape
- Metropolitan Leisure zone
- River Area and Surroundings
- Coastal Reservation
- Bathing Beach
- Memorials and National Monuments
- Highway
- Main Suburban Road
- Main Road
- Regional Road
- Urban Transit Road
- Scenic Route / Local Scenic Route
- Interchange
- Route No.
- Major Transport Terminal
- Rail Tracks
- Strip for Electricity High Tension Lines
- Electricity High Tension Lines
- Power Station
- Boundary of Plan
- Municipal Boundary





- Coordination between development of housing and employment and development of the infrastructure systems required for their functioning.
- Providing a solution for housing demand while creating an optimal combination between permitted land-use assignments.
- Assignment of open spaces and creation of divisions between urban development areas, in order to conserve the quality of the environment, the scenic and natural values, and to create possibilities of leisure-time recreation.
- Determining conditions for building of employment areas, suited to the changes anticipated in the employment system.
- Operative purposes were determined in order to accomplish the major purposes.

## **2.4 Planning Principles and Directives**

The plan was designed to guide the decision makers in all matters of policy in planning and development of the Center District. The plan expresses the national planning policy and adopts and details the National Master Plan.

The principles expressed in the instructions and in the drawings express a preferred alternative for development of the Center District as part of the development of the Tel Aviv metropolitan area.

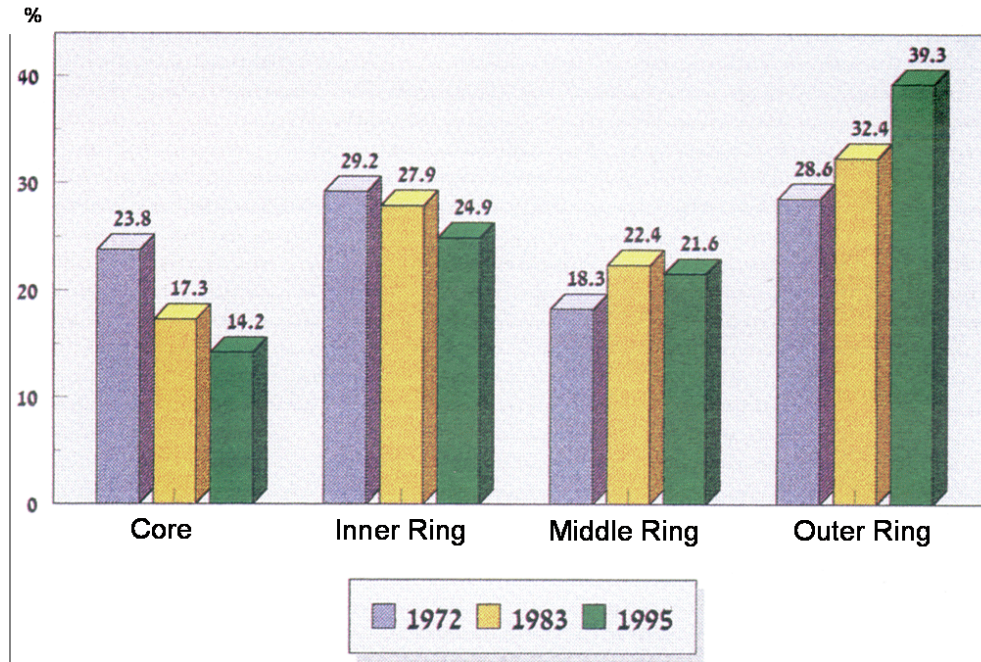
### 2.4.1 Population and Housing

The plan indicates continued urban development and reinforcing of the building in the city centers in the areas of the approved Master Plan, with increasing of densities and utilization of inventory in the framework of the existing capacity and avoidance of overflow into the rural region.

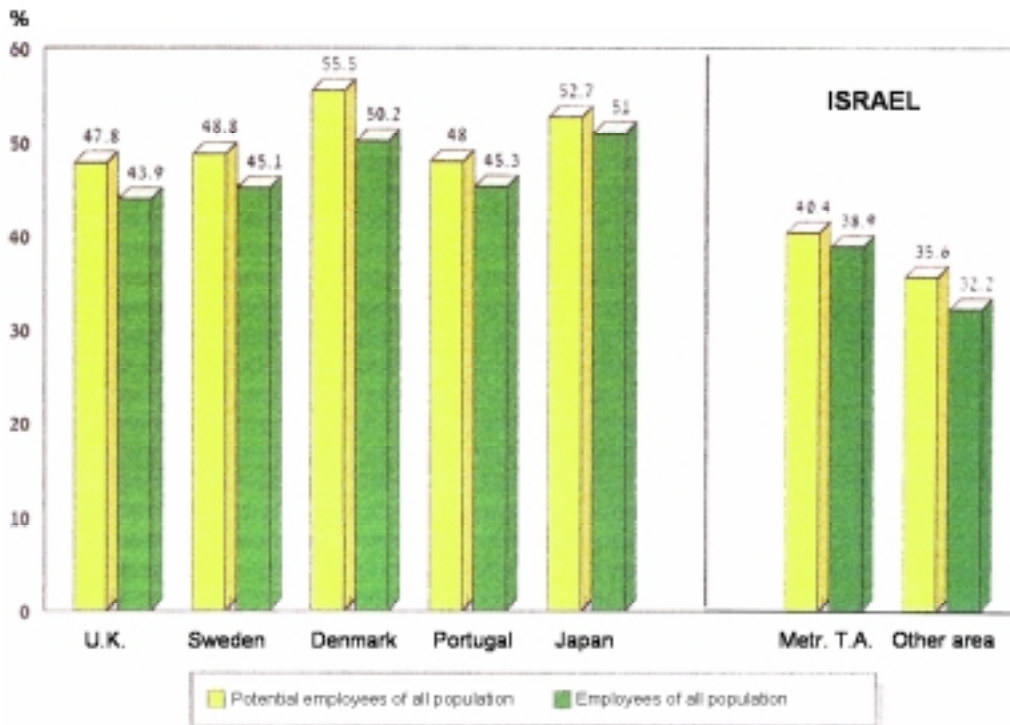
The plan assigns part of the eastern section of the district for development and occupancy with expansion of existing towns.

As regards rural settlement, the plan encourages controlled occupancy in rural development area, in order to prevent suburbanizing and urban overflow to the rural sector.

**Distribution of Population in Tel-Aviv metropolitan by Rings  
In the years 1972, 1983, 1995**



**Employment rates in western countries and Israel  
in the years 1995-1997**



## **2.5 Employment**

### 2.5.1 Subsidiary Metropolitan Employment Centers

The development strategy for the Central District in the field of employment points to development of subsidiary metropolitan employment areas including diversified specialization areas. Their location is chosen in proximity to national traffic arteries, railways and traffic terminals that will allow improved accessibility at a high level, particularly for public transport.

### 2.5.2 District Employment Centers

- a. Employment centers will be developed in the areas of and/or in proximity to the urban centers and/or in continuation of existing employment centers, with encouragement of regional cooperation of urban and area authorities in planning, construction and operation.
- b. The district commission will be empowered to approve a plan for an employment area that is not marked in the land-use assignments drawing and provided that the plan for an employment center meets the requirements of section (a) and all without this constituting a modification of this plan.
- c. Any plan designating land for a new local employment area of more than 10 hectares will be accompanied by an economic feasibility study plan, a review of the influence on the environment and a review of the traffic influence.

## **2.6 Quality of the Environment and Infrastructures.**

The plan emphasizes the need for maximum integration between the traffic system and the different infrastructures, for maximum utilization of the land resource, while maintaining an available contour in as far as possible and conserving the quality of the environment.

The plan sets directives with the aim of preventing or reducing damage or environmental nuisance and preventing pollution of water sources.

### 2.6.1 Open Spaces System

The plan indicates maximum utilization of the land with balance between development needs and open spaces for both future generations and the present generation.

The district deployment of the open spaces is based on the axis of the coastal strip in the west and the axis of the low coastal plain in the east and on the connection between them along the riverbeds. The plan emphasizes the path of the Alexander, Poleg, Yarkon, Ayalon and Sorek rivers that cross the district and constitute a basis for development of extensive recreation areas in the Center District. The deployment creates a succession of open spaces and a link between leisure time recreation centers, while maintaining the natural and scenic values and creating additional reserves for recreation purposes.

The deployment of the open spaces, that includes agricultural areas, was designed to create clear divisions between the urban settlements in the district, to prevent urban continuity, and

to guarantee a continuity of the open spaces, all this without harming agriculture as a production branch.

### 2.6.2 Roads in Open Spaces

Every plan for a road marked in the traffic appendix in this plan as a scenic road, will be drawn up in accordance with the instructions of Amendment 7 to National Master Plan 3 in the matter.

A planning institution will be entitled to demand also a visual survey relating to means and restrictions required for conserving of the scenery viewed from the road and for visual integration of the road with its environment.

### 2.6.3 Infrastructures and Environmental Sensitivities

The passage of infrastructures in built-up areas will be underground in as far as possible. The district commission may, at its discretion, determine underground passage of infrastructures also in open spaces.

A planning institution will verify the existence of suitable solutions for the infrastructures, including a waste solution and a solution for sewage collection, purification and removal.

### 2.6.4 Sites for Restoration

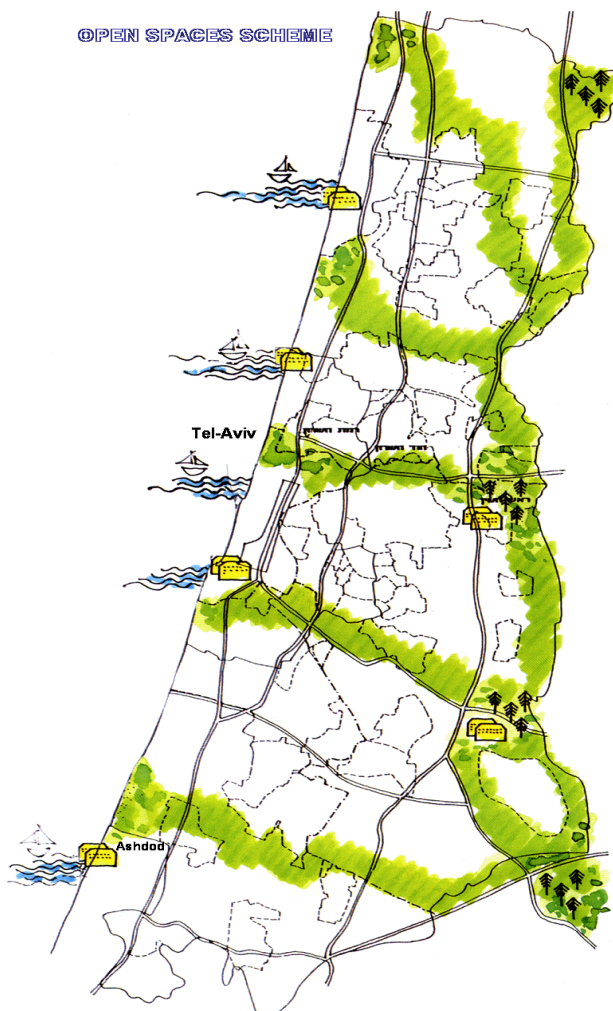
A local Master plan will contain instructions and directives for mapping and assignment of sites for restoration, that were damaged from previous use for quarrying and removal of waste, to prevent hazards from these sites to their environment. On these sites uses will be permitted that do not contradict the land-use assignments in their surroundings.

For each restoration site a detailed plan will be prepared in which instructions will be determined as regards the manner of execution of the restoration.

Until approval of the detailed restoration plan, no building will be approved in the vicinity of the restoration site.

## **MASTER PLAN OF CENTER DISTRICT No. 3-21**

### **OPEN SPACES SCHEME**



## **2.7 Traffic**

### 2.7.1 Policy and Goals of the Traffic System

The plan emphasizes the need for continued development of the traffic infrastructure that will reinforce the links within and to the district.

In order to come to terms with the traffic volumes that exceed the road system capacity, the plan promotes development of public traffic systems including mass transportation systems and passage to massive use thereof by creating clear preference for public transport over private vehicles.

### 2.7.2 Means for Execution of the District Traffic Policy

This plan guides the planning institutions in the district area to take the following steps:

- a. Locating of high-density residence, locating of new employment centers, consolidation of existing centers and all close to existing or planned public transport stations.
- b. Locating stations for public transport close to high-capacity public transport arteries including rail transport.
- c. Bringing high-density (rail) public transport arteries closer to the existing urban centers.
- d. Preparing an applied traffic master plan for integration between the various transport systems, with emphasis on the connecting between the different transport means and its improvement.

## **3. INSTRUCTIONS REGARDING AREA PLANNING REGIONS**

Within five years from the date of approval of this plan, or within another period as will be decided by the District Commission, a partial District Master Plan will be prepared for each of the area planning regions.

### **3.1 Instructions regarding Local Planning Regions**

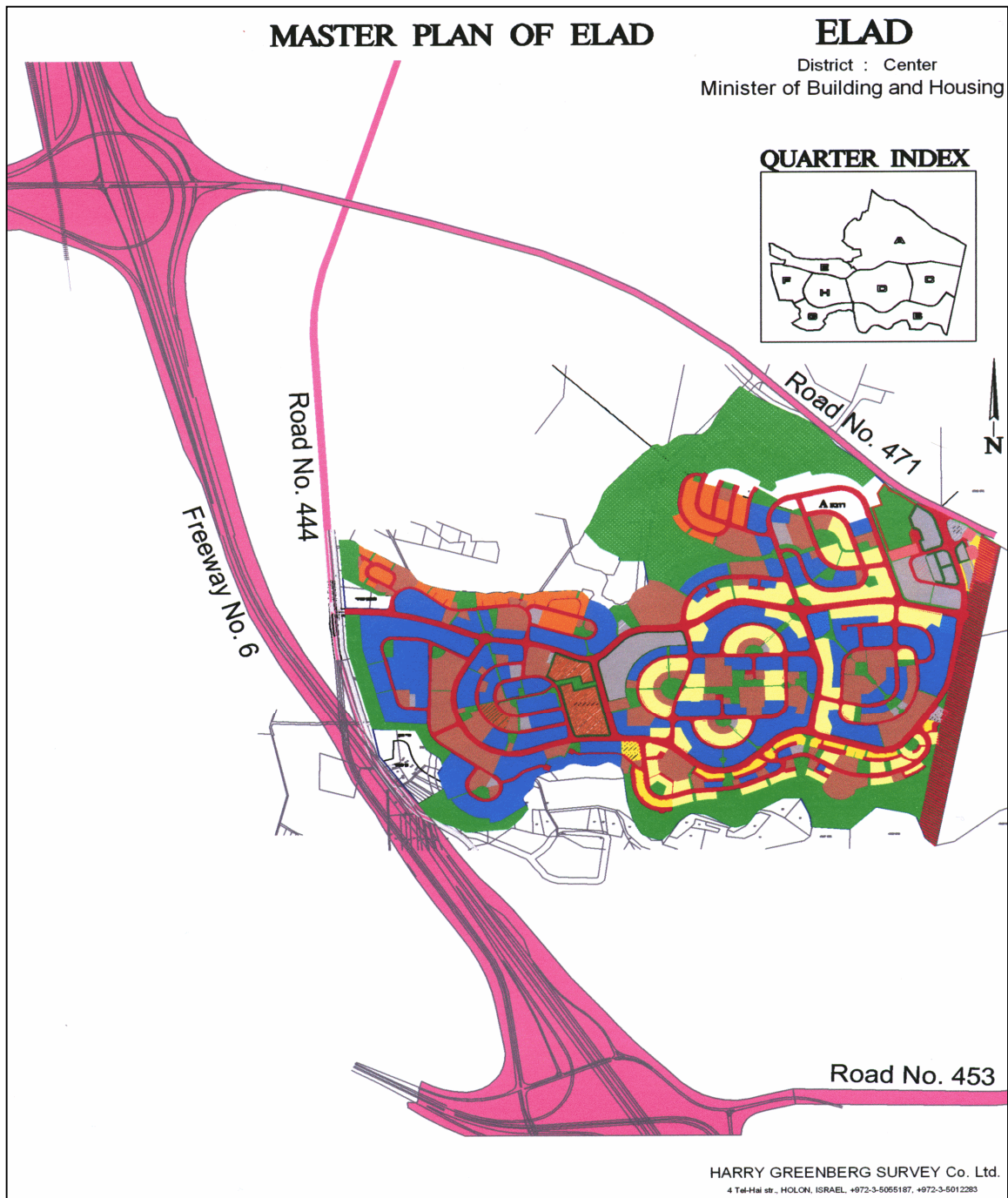
A set of general and strict instructions for further planning.

### **3.2 Instructions, Goals and Uses regarding the Land-Use Designations Marked in the Plan**

- Urban development area – marked in the land-use assignments drawing with cross and horizontal broken lines, on a yellow background.
- Rural development area - marked in the land-use assignments drawing in yellow.
- Industrial, crafts and employment area - marked in the land-use assignments drawing in mauve and black diagonal lines.

- Subsidiary metropolitan employment area - marked in the land-use assignments drawing in mauve and double black diagonal lines, demarcated in mauve.
- Agricultural area - marked in the land-use assignments drawing in thin diagonal light green stripes.
- Open rural scenic area - marked in the land-use assignments drawing in broad light green diagonal stripes.
- Metropolitan recreation area - marked in the land-use assignments drawing in dark green broad diagonal stripes.
- River area and its surroundings – the river course is marked in the land-use assignments drawing in light blue and its surroundings in dark green.
- Recreation, leisure and tourist area - marked in the land-use assignments drawing in orange.
- Institution - marked in the land-use assignments drawing in black diagonal cross lines against a brown background.
- Main transport terminal - marked in the land-use assignments drawing with black circle symbol.
- Area of engineering installations - marked in the land-use assignments drawing with thin pink diagonal stripes.
- Installations and corridor for electricity system.
- National parks, nature reserves and scenic reserves.
- Forest - marked in the land-use assignments drawing in dark green with black triangles.
- Quarrying and restoration area - marked in the land-use assignments drawing and Infrastructures and Environmental Influences Appendix with pink diagonal stripes.
- Airport - marked in the land-use assignments drawing and Infrastructures and Environmental Influences Appendix in broad gray diagonal stripes.
- Cemetery - marked in the land-use assignments drawing in light brown with black horizontal lines.

- Memorial site and national site - marked in the land-use assignments drawing with a Menorah-shaped symbol.



## **4. GENERAL INSTRUCTIONS**

### **4.1 Level of Accuracy of the Plan and Permitted Deviations**

- a. Markings in the drawing indicate a general trend for the desired location of an area for land assignment and use. The precise location, size and borders will be determined in a local Master plan or in detailed plans.
- b. Deviations deriving from the scale of the drawing (scale of 1:50,000), which does not allow accuracy (as regards the location, the size of the site, and because of the topographical conditions of the area) will be permitted and will not be considered as a modification of this plan.
- c. It will be permitted to deviate from the land-use assignments marked in the drawing in order to avoid damage to scenic assets, areas of antiquities, historic sites, or buildings of historic value and this will not be considered modification of the plan.

### **4.2 Monitoring and Control Committee**

Delegates of the principle ministers and districts and local municipalities will form the committee.

## **5. LOCAL MASTER PLAN**

The Local Master Plan must fulfill the requirements of the District Master Plan.

Elad is a new town planned in the eastern part of the Center District. The initiator is the Minister of Construction and Housing in Israel upon a government decision in 1990.

### **5.1 Scope**

immediate housing for 50,000 residents. The government initiative is needed in new extensive housing projects; usually such projects require large investments in major infrastructure and transportation solutions. In the next map we see the Local Master Plan of Elad divided into 8 quarters A-H. The new and under construction Highway no.6, which is also called Trans Israel Road, because it is planned from north to south of Israel, has a major influence. Elad is located 10 miles from Tel-Aviv, well planned and designed, built under strict regulations and supervised continuously. Public bids are published for private building enterprisers. The accompanying of the Minister of Construction and Housing throughout all the stages of planning, design and construction is crucial for success. Almost every housing unit has been sold immediately.

## **6. LOCAL DETAILED PLAN**

The final plan prior building permit is the Local Detailed Plan.



## **7. SUMMARY**

Constant development of urban areas, rise in quality of life and continues movements of population is demanding permanent re-survey following by a re-evaluation and new amendments of he existing plans.

## **BIBLIOGRAPHICAL NOTES**

Fogel U, 1997: final report for the Master Plan of Centre District.

Fux D. and Spector H, 1997: report on transport policy

Bezalel B. and Kfir G, 1997: report on transport planning

Cohen J and Toister G, 1997: residence and employment - economical report

Feitelson A, 1996: model of environmental conflicts in the metropolitan development