REPUBLIC OF CYPRUS

NATIONAL REPORT

OF THE
REPUBLIC OF CYPRUS

Habitat II

THE SECOND UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS
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PREFACE

This report is the contribution of the Republic of Cyprus to the HABITAT II: The Second United Nations Conference on Human Settlements, to be held in Istanbul in June 1996

The report focuses on the evolution, problems and prospects of both urban and rural settlements in Cyprus, primarily in the context of the social and economic development which has been taking place in the Island since the Turkish invasion of 1974. The central theme of the report is that the ultimate goal of development should be to further improve living standards and the quality of life of the population.

The National Report is divided into five parts. The introductory part provides basic information on the social, economic and demographic characteristics of Cyprus. Furthermore, it analyzes the political problem of the country with emphasis being given on the repercussions of the Turkish invasion.

Part B describes the urbanization trends over the period of the past fifty years, explains the planning legislation and administration and describes the transportation problems and issues facing the four major towns in the country.

Part C examines the existing environmental problems and outlines the institutional framework for environmental planning and management. Part D discusses the recent trends and developments in the housing sector and describes the housing problems and policies and outlines the programmes which are offerred by the public and private sector. Finally, Part E deals with safety in housing, with particular emphasis on the problems, measures and policies related to local building materials.

This report has been prepared for the National Committee by a team of Planning Officers of various professional disciplines from the Department of Town Planning and Housing. Submissions from both Government and non-governmental organizations have been received and considered in the preparation of this report.

SUMMARY AND CONCLUSION

A. General Information

Cyprus is the third largest island in the Mediterranean after Sicily and Sardinia. Due to its location it was occupied and ruled in the past by several dynasties.

The island of Cyprus gained her independence in August 1960 and was proclaimed a Republic. For administration purposes it is divided into six districts. It's general local administrative structrure operates through a system of Municipalities, Improvement Boards and Village Commissions.

After independence and up to 1973, Cyprus went through an era of fast and almost uninterrupted growth. Despite the breakdown, in the years 1974 and 1975, due to the Turkish invasion, the economy recovered soon after and a remarkable growth has been achieved. The years between 1975-1993 once again witnessed substantial economic growth, accompanied by an impressive expansion of social services. Today, the people of Cyprus, living in the Government controlled part of the country, enjoy full employment, a high level of education, a high standard of health care and crime is maintained at low levels.

B. Urban and Rural Settlements and Planning

The urbanization process in Cyprus has coincided with the transition from a dominantly rural-based economy to a commercial and industrial economy that favoured the growth of towns. Since World War II, urban centres in the island have been growing at a fast rate. Whereas in 1946 only 26 percent of the total population lived in towns, by 1973 this had risen to 42 percent. In 1992 about 67 percent of the total population lived in urban areas.

It is important to stress that most problems faced by the four major urban centres, motably transportation, housing and the provision of basic infrastructure, have been the result of the influx of 200.000 refugees who have been evicted from their homes in the northern part of the island by the Turkish army in 1974. The specific planning problems arising from this haphazard urban expansion are the shrinking of agricultural land in favour of residential uses, unconsolitated growth often coupled with insufficient services and a spatial pattern of land use in the fringe areas that is heterogeneous and unstable.

In 1990 the Government of Cyprus implemented the Town and Country Planning Law in order to ensure that physical

development would be at pace with both social and economic development. This legislation focuses on the need for protecting the amenities and the general welfare of the local population, as well as on the protection of the quality of the very sensitive insular environment in accordance with the principles and the objectives of the strategy for sustainable development.

Physical development in Cyprus is promoted and controlled according to the provisions of approved Local Plans prepared for the four major towns and other townships experiences rapid development. In general, local plans contain policies concerning the spatial destribution of major land uses, the enforcement of appropriate development densities, which are related to the environmental carrying capacity of specific areas and the provision of necessary infrastructure and community services and facilities. In addition, they provide for the protection of a very high architectural and cultural local heritage and for the appropriate re-use and revitilization of traditional/historic buildings and areas through the preparation of Area Schemes for specific geographical areas, primarily in the town centres.

C. Environmental Planning and Management

The Government of Cyprus has applied the principles of sustainable development and has undertaken a methodical effort to integrate environment and development. Turkey's military invasion of Cyprus has been, among others, responsible for the most serious threats to the Cyprus ecosystem as it brought about an almost complete division of all the ecological and environmental parameters of the island. The quality of the environment in Cyprus is quite good and is expected to remain as such by introducing the following more environmentally sensitive policies:

(a) The Environmental Framework Law will be finalized.

(b) Set minimum standards and encourage the re-use of treated waste water.

(c) Central sewerage systems will be installed not only in urban but also in rural areas.

(d) Incentives for increased recycling of solid wastes.

(e) Urban and Regional plans will be reviewed following the preparation of earthquake hazard and micro-seismic zoning maps.

The turning point will be, of course, the unification of the island which will allow for a unified environmental policy for the whole country to be implemented.

D. Housing Accommodation

The phenomenon of homelessness which exist in most countries of the world, both developed and developing, may be said to be completely unknown in Cyprus. According to the 1992 Census of Housing, not a single family or person was without permanent roof i.e. living in the open and moving from place to place.

However, as a result of the 1974 Turkish invasion of Cyprus and the occupation, ever since, of about 37% of the island's territory, 45.000 families were evicted from their homes and became all of a sudden homeless. In the face of this terrible situation, the Government of Cyprus has, during the last 20 years, put every effort and gave first priority, to the accommodation of the displaced families, under acceptable housing conditions.

A main policy objective of the Cyprus Government is that every family should have the opportunity to live in decent housing conditions and the Government efforts will continue in future in order to improve further the quality of life of the population in general and of those is greater need in particular.

E. Safety in Housing

Despite rapid developments in the past, the construction sector is presently facing several problems mainly related to the quantitative sufficiency and quality of the local building materials, which in turn affect the quality and safety of the structures. Faced with the need to resolve these problems, the Government of Cyprus has adopted a number of measures such as the establishment of the Cyprus Organization of Control of Quality (CYS), the introduction and application of antiseismic Standards and measures, the laboratory testing materials etc.

During the next few years, strong emphasis will be given by the Government to the introduction of new Standars of building materials and also to the revision of existing Building Regulations and particularly to the Cyprus Seismic Code, since Cyprus is under high seismic activity. All these efforts will eventually help towards the improvement of the quality and safety of the structures.

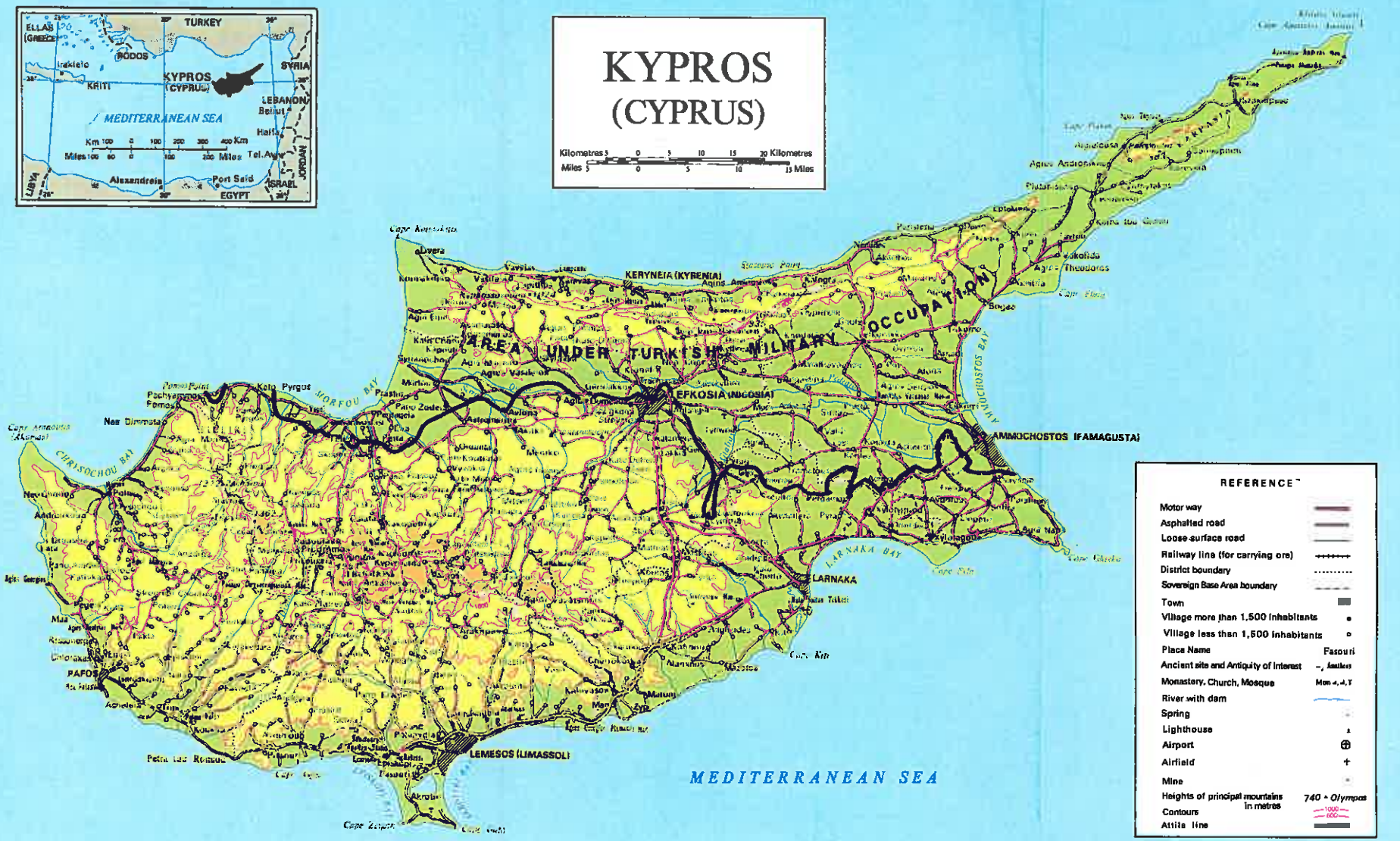
TABLE OF CONTENTS

PART C

PART D

LIST OF TABLES

APPENDICES



Prepared by the Department of Lands and Surveys, Cyprus.

PART A

1.0 CYPRUS: GENERAL INFORMATION

1.1 LOCATION AND GEOGRAPHIC CHARACTERISTICS

Cyprus is the third largest island in the Mediterranean, after Sicily and Sardinia, with an area of 3,572 sq. miles (9251 sq. Kms). It is located at the north-eastern corner of the Mediterranean, at a distance of 300 km north of Egypt, 90 km west of Syria, and 60 Km south of Turkey. Greece lies 360 Km north-west (Rhodes - Crete).

The country has two mountain ranges: the Pentadaktylos range which runs along almost the entire northern coast, and the Troodos massif in the central and southwestern parts of the island. Cyprus' coastal line is indented and rocky in the north with long sandy beaches in numerous coves in the south. The north coastal plain, covered with olive and carob trees, is backed by the steep and narrow Pentadaktylos mountain range of limestone, rising to a height of 1.042 m. In the south the extensive mountain massif of Troodos, covered with pine, dwarf oak, cypress and cedar, culminates in the peak of Mount Olympus, 1.953 m above sea level. Between the two ranges lies the fertile plain of Mesaoria (see map 1).

The island has a Mediterranean type of climate. The typical Mediterranean seasonal rhythm is strongly marked in respect to temprerature, rainfall and other climatological characteristics. Clear skies and high sunshine incidence, hot dry summers and mild winters, separated by short Autumn and Spring seasons, constitute important features of the Cyprus climate.

Cyprus commands a "cross-roads" position, linking the east with the west, Europe with Africa and the Middle East. Because of its strategic location Cyprus, throughout its long history, has been subject to the political and economic forces at work in the Mediterranean. The Island has often been used by various people as a "stepping stone" and a "strategic output", it has acted as the "apple of discord" among the great powers and it has been ruled successively by many conquerors. The strategic importance of Cyprus increased substantially after the Second World War, following the emergence of the Mediterranean as a critical area in international affairs.

1.2 ADMINISTRATIVE STRUCTURE

For administration purposes, Cyprus is divided into six Districts: Nicosia, Famagusta, Limassol, Larnaca, Paphos and Kyrenia. Nicosia is the capital and seat of government since medieval times. Each district is headed by an appointed District Officer who is esentially the local representative of the central government. The District Officer acts as chief coordinator and liaison for the activities of all Ministries in the District, aiming at a two-way of information. District Officers report and are answerable to the Ministry of the Interior, headed by a Director General.

1.2.1 Local Authorities

The general local administrative structure in Cyprus operates through a system of Municipalities, Improvement Boards and Village Commissions. These are independent bodies responsible for the management of their local affairs with no hierarchical relationship between them. Municipalities constitute the form of local government in the six main towns (district seats) as well as a number of smaller towns. Any community may become a Municipality by local referendum followed by approval from the Council of Ministers, provided it has either a population of more than 5,000, or local economy is robust enough and its infrastructure sufficient to enable it to function as a municipality.

The government of Cyprus, recognizing the essential and positive role of local authorities, has established a policy of decentralization of decision - making, designed to give local authorities their rightful status, responsibilities and resources.

Improvement Boards and Village Commissions constitute the local structures in all remaining communities. Economically stronger communities may become Improvement Boards, intermediate stage between Municipalities and Village Commissions, whose functions and authorities are wider than those of the latter. Each Improvement Board is presided over by the respective District Officer. Members of the above bodies are elected by universal suffrage of citizens over 18. Central government involvement focuses on extending technical and administrative support and supervision.

Table 1.1 - Types of Local Government

	Total Number	Under Turkish Occupation
MUNICIPALITIES	32	9*
IMPROVEMENT BOARDS	85**	15*
VILLAGE COMMISSIONS	352	151

* In the case of occupied communities, the creation of new Municipalities and Improvement Boards has been frozen since the Turkish invasion of 1974.

** Some Improvement Boards are made up of two neighbouring communities.

The Turkish invasion of Cyprus in July 1974, with the occupation of about 37% of its territory by Turkish troops and the forcible displacement from their homes of about 200.000 Greek Cypriots created a totally new situation. About 2/3 of the island's entire Greek Cypriot population now live in the four free district towns and their suburbs.

1.3 DEMOGRAPHIC CHARACTERISTICS

The population of Cyprus in 1994 was estimated at 729,800 compared to 722,800 in the previous year, recording an increase of about 7000 persons or 1.0%. Population distribution by ethnic group is 84,5% Greek Cypriots including Maronites, Armenians and Latins and 12,5% Turkish Cypriots. Foreigners residing in Cyprus account for 3% of the population.

After the Turkish invasion of 1974 as a result of which the population experienced a negative growth through war losses, emigration and fertility decline, it began to increase once more. Between 1976 and 1982 the rate of growth was at a rate 0.8%, while accelerated between 1982 and 1992 registering a rate of 1.6% per annum.

Table 1.2 - Increase of Population

Year	Population (000s)	(Annual growth rate %
1960	573.560	
1973	637.800	+0.8
1976*	482.316	
1982*	512.098	+0.8
1992*	602.025	+1.6

* Census after 1974 refer to Government Controlled area.

Of the 602.025 persons enumerated in the last Census of 1992, 299.614 were males and 302.411 females resulting in an overall sex ratio of 991 males per 1.000 females. The sex ratio is in favour of males at the very young age groups but the gap steadily narrows with advancing age.

The geographical distribution of the population is shown in table 1.3.

Table 1.3 - Distribution of the population by district,* urban/rural residence for the census years 1982 and 1992

DISTRICT	TOTAL		URBAN		RURAL	
	1982	1992	1982	1992	1982	1992
TOTAL	512.098	602.025	325.386	407.324	186.712	194.701
Nicosia	210.684	244.779	149.071	177.451	61.613	67.328
Famagusta	25.659	30.798	--	--	25.659	30.798
Larnaca	84.496	100.242	48.330	60.557	36.166	39.685
Limassol	145.614	173.634	107.161	136.741	38.453	36.893
Paphos	45.645	52.572	20.824	32.575	24.821	19.997

Source: Department of Statistics and Research
* Data refer to the Government Controlled area

Of the 602.025 enumarated population, 407.324 resided in urban areas while 194.701 in rural areas. During the period 1982-1992 the proportion of the population living in rural areas has dropped from 36,5% in 1982 to 32,3% in 1992.

The total fertility rate decreased gradually from its local peak of 2,46 in the period 1982-1985 to 2,38 in the period 1987-1990 and decreased further to 2,33 in the 1991-1994. The proportion of children below 15 increased to 25,2% and the proportion of old-aged persons 65 and over droped to 11,0% compared to 24.7% and 11.1% respectively in 1982 (table 1.4)

Table 1.4 - Age Groups by Size

Age Group	1982		1992	
	Number	%	Number	%
0 - 14	126.246	24.7	151.779	25.2
15 - 64	328.927	64.2	383.107	63.6
65 and over	56.925	11.1	67.139	11.0
TOTAL	512.098	100.0	602.025	100.0

The total number of households was 185.459 in 1992. Of these 125,485 (or 67,7%) resided in urban areas while 59,974 (or 32,3%) in rural areas. During the period 1982-1992 the total number of households increased by 40,429 or 27,9%. The average size of household stood at 3,23 and the modal size was four persons in urban areas and two persons in rural areas. Households were slightly larger in rural areas with a mean size of 3,24 compared to 3,22 in urban areas. Comparing now the distribution of households by size as obtained in the 1982 census and the 1992 census of population some notable changes are observed (See table 1.5).

TABLE 1.5 - Percentage distribution of households by size and urban/rural residence as at Census 1982 and 1992

Size of Household (No. of persons)	TOTAL		URBAN		RURAL	
	1982	1992	1982	1992	1982	1992
Total	100,0	100,0	100,0	100,0	100,0	100,0
1 person	10,0	12,6	8,7	12,4	12,2	13,2
2 persons	21,7	24,8	19,5	23,3	25,5	27,9
3 "	17,3	17,4	18,3	18,6	15,6	14,8
4 "	25,6	25,6	28,5	27,6	20,6	21,2
5 "	15,2	13,8	15,8	13,2	14,2	14,9
6 "	6,3	4,3	6,0	3,7	6,8	5,6
7 "	2,4	1,1	2,0	0,9	3,0	1,7
8 or more persons	1,5	0,4	1,2	0,3	2,1	0,7
Average Size of Household	3,51	3,23	3,56	3,22	3,43	3,24

Source: Department of Statistics and Research

The proportion of middle size households consisting of three to four persons has not changed much, but large-size households of five or more persons has decreased from 25,4% in 1982 to 19,6% in 1992, whereas small size households of one or two persons have increased from 31,7% in 1982 to 37,4% in 1992. Another significant change that occured during the period 1982-1992 is the fall in average household size, both in urban and rural areas. Overall, the average size of household has dropped from 3,51 persons in 1982 to 3,23 in 1992.

1.4 SOCIO-ECONOMIC CHARACTERISTICS

1.4.1 Economy

For the past fifteen years, Cyprus has enjoyed rapid and uninterrupted economic growth, averaging about 6% p.a., bringing its per capita

income in 1993 to roughly $11,000. Its 602,000 people living in the government controlled part of the Island enjoy full employment, a high level of education, and life expectancy at birth of 77 year. Growth has been fastest in the sector of tourism, business service and construction. A slow-down to 0.6% growth in 1991, associated with the Gulf war, was an aberration in the long term trend. Cyprus economic growth was quickly corrected in 1992 with a rebound of 9.7% increase of GDP, but has highlighted the risks that a small open economy with highly - concentrated exports faces when unfavourable external developments occur. (The rate of grown is shown in table 1.6).

Table 1.6 - Rate of Change of GDP (at constant prices) 1987 - 1993

Year	Annual Change (%)
1987	7.0
1988	8.5
1989	7.9
1990	7.4
1991	0.6
1992	9.7
1993	1.6
Average 1987 - 1993	6.1

Source: Department of Statistics and Research Economic Report 1993

The sectoral composion of growth follows the familiar pattern of rapidly - growing economies. The structure of the economy of Cyprus is characterised by the great significance of tourist and other private services. Cyprus has gradually developed from an exporter of agricultural products and minerals during the 1960-74 period, and an exporter of manufactured products during the second half of the 1970s, into a tourist services centre during 1980s and the early 1990s. The structural changes are set out in Table 1.7.

Table 1.7 - Percentage distribution of gross domestic product by economic activity (Current Market Prices)

%

Economic Activity (ESIC 1968)	1987	1988	1989	1990	1991	1992	1993
Agriculture, hunting forestry and fishing	7,7	7,5	7,3	7,2	6,4	6,0	6,0
Mining and quarrying	0,4	0,4	0,3	0,3	0,3	0,3	0,3
Manufacturing	16,0	16,2	15,4	14,8	14,8	14,1	13,6
Electricity, gas and water	2,3	2,3	2,2	2,1	2,1	2,1	2,2
Construction	9,9	9,9	10,0	9,9	10,4	10,4	10,2
Wholesale and retail trade, restaurant and hotels	20,3	20,3	21,8	22,3	22,1	22,1	20,4
Transport, storage and communication	9,8	9,6	9,6	9,4	8,9	8,9	8,7
Finance, insurance, real estate and business services	14,9	15,5	15,0	15,6	16,3	16,3	16,6
Community, social and personal services	5,3	5,5	5,7	5,7	6,6	6,6	7,3
Total industries	**86,7**	**86,8**	**87,2**	**87,3**	**86,3**	**86,7**	**85,4**
Producers of government services	12,8	12,6	12,2	12,1	12,9	12,6	13,8
Public administration and defence	7,5	7,5	7,2	7,2	7,8	7,6	8,3
Public services	5,2	5,1	4,9	4,9	5,1	5,0	5,5
Other producers	0,6	0,6	0,6	0,7	0,7	0,7	0,8
Subtotal	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100.0**

Source: Department of Statistics and Research
Economic Report 1993

High Inflation rates have been almost absent for most of Cyprus' recent history. Over the past few years, however, some instability seems to have appeared: the rate of inflation (as measured by the consumer price index) was 5.0% in 1991, 6,5% in 1992, and 4,9% in 1993. Similarly, the balance of payments performance had been satisfactory during most of this period showing a surplus in the overall balance of C£47,0 mn in 1993 compared to a C£135,5 mn deficit in 1992. The foreign exchange reserves kept accumulating reaching a level of C£1.35 mn by the end of 1993 while foreign public debt dropped by 6,6% to C£524,3 mn from C£561,4 mn in 1992. The fiscal deficit also decreased significantly by 47,3% in 1993 and dropped to C£77,8 mn from C£147,6 mn in 1992.

1.4.2 The Labour Market

Developments in the Labour market during 1987-93 exhibited fluctuations. The first four years were characterized by an intensive demand for labour and severe shortages in all sectors of the economy. In contrast, during 1993 the demand for labour decreased as a result of the slow-down of economic activity and unemployment rose steeply. In 1993 the island's Economically Active Population was estimated at 288,500 persons. During the same year the Gainfully Employed Population averaged 270,500 persons. Wholesale and Retail Trade, Restaurants and Hotels absorb the largest part of the gainfully employed population (67,400 persons or 25,2%) followed by manufacturing (45,500 persons or 17,0%).

The labour force in Cyprus increased from 220,000 in 1980 to 288,500 in 1993, i.e. at an annual rate of 2,2%, about twice that of the working age population. This was mainly due to the rise in the participation rate, which increased overall from 66% to 76%, and especially to the influx of women, whose participation rate increased steadily from 44% to 56% (compared with 88% to 94% for men). The annual growth rate of the female labour force was 3.4% more than double that of men, 1.6%, so that the overall share of women in the labour force rose from 33% in 1980 to 39% in 1993. Several other special characteristics of the labour market have contributed to the rise in labour supply. There has been a small but steady return of workers from abroad, and of those working with foreign organizations in Cyprus (British military authorities, NAAFI) to employment in the domestic market. For labour statistics see table 1.8

Table 1.8 - Labour Force by Category

(a) Average annual number of persons (1000s)

Category	1987	1988	1989	1990	1991	1992	1993
Gainfully employed population for the production of Gross Domestic Product	226,9	237,5	246,7	253,6	255,2	266,8	267,1
Other gainfully employed population in Cyprus (1)	4,0	3,9	3,9	3,8	3,8	3,7	3,4
GAINFULLY EMPLOYED POPULATION IN CYPRUS	230,9	241,4	250,6	257,4	259,0	270,5	270,5
Cypriots working temporarily abroad	8,6	7,9	7,4	5,0	4,0	3,9	3,4
TOTAL GAINFULLY EMPLOYED POPULATION OF CYPRUS	239,5	249,3	258,0	262,4	263,0	274,4	273,9
Unemployed	8,7	7,4	6,2	5,1	8,3	5,2	7,6
Other economically active population	9,0	9,0	9,0	8,7	8,1	7,2	7,0
TOTAL ECONOMICALLY ACTIVE POPULATION OF CYPRUS	257,2	265,7	273,2	276,2	279,4	286,8	288,5

Source: Department of Statistics and Research
Economy Report 1993

(1) It includes local personnel of the British Bases, Embassies and other International Bodies

Registered unemployment increased to 7,638 persons or 2,6% of the economically active population in 1993, from 5,187 persons or 1.8% in 1992. Of the total number of those registered unemployed in 1993, 4.410 or 57,8% were females. Persons under the age of 29 numbered 2.277 or 29,8% of unemployment.

(Table 1.9 shows unemployment by sex 1987-1993)

TABLE 1.9 - Unemployment by sex 1987 - 1993

Year	Total	Males	Females	% of Economically Active Population
1987	8.700	4.367	4.342	3,4
1988	7.412	3.664	3.748	2,8
1989	6.243	2.913	3.330	2,3
1990	5.068	2.464	2.604	1,8
1991	8.319	3.780	4.539	3,0
1992	5.187	2.378	2.809	1,8
1993	7.638	3.228	4.410	2,6

1.4.3 Education

Overall responsibility for education rests with the ministry of Education and Culture. A small number of vocational and post-secondary professional institutions however, come under the Ministries of Labour and Social Insurance, Agriculture and Health.

Education is provided through pre-primary and primary schooling - the latter starts at the age of 5 years and 6 months - secondary general and secondary technical/vocational schools, special schools, the University and other third-level institutions and non-formal institutions centres.

Public schools are mainly financed from public funds, while private institutions raise their funds mainly from tuition fees, small state subsidies and in some cases from foreign and through overseas agencies and religious organizations.

The educational system is highly centralized with the appointments, transfers, promotions and disciplinary matters of teachers controlled by the State. Syllabi, curricula and textbooks are prescribed to a large extent by governmental agencies. Schools at all levels are visited by the inspectorate which offers in-service training, advice and supervision. Schools evaluation lies also with the inspectorate. Educational policies are formulated by the Ministry of Education and Culture on the advice of the Education Council of Ministers. The construction, maintenance and equipment of school buildings are the responsibility of Central

Government and local education authorities. Private schools are owned and administered by individuals or bodies, but are liable to supervision and inspection by the Ministry of Education and Culture.

The importance of pre-primary education has been recognised by the Government. Temporary public nursery schools were established after the Turkish invasion in 1974 in refugee camps and settlements. Since 1979 the public pre-primary education expansion project is in effect, offering equal educational opportunities to children aged 4 1/2 - 5 1/2 years. The final target is full coverage of children of this age bracket.

The expansion of pre-primary education, state and private, covers around 53,6% of the children aged between 3 - 5. There are three categories of pre-primary institutions:

(a) Public nursery schools are established by the government and supported partly by the government and partly by the parents' associations. The teachers are centrally appointed and paid through the government budget.

(b) Community nursery schools are established and supported by local authorities and parents' associations which also employ the teachers. These nursery schools are highly subsidised by the government.

(c) Private nursery schools are established and supported by individuals on a profit making basis.

Public community and private pre-primary institutions are supervised by the Ministry of Education and Culture. A number of daycare centres come under the jurisdiction of the Ministry of Labour and Social Insurance.

Primary education is both free and compulsory. The government pays the salaries of the teachers and hands out annual grants to all local authorities according to the number of pupils in their area.

Schools function in every town and village where more than 15 children live. Area schools serve neighbouring communities with less than 15 pupils. Most of the big primary schools in urban areas and in big rural communities are divided into two cycles: cycle A catering

for grades I-III and cycle B comprising of grades IV-VI. The pupil-teacher ratio at national level is 19,3 while teachers are allocated in such a way that the biggest class size does not exceed 34 pupils.

Cypriot students pursue their university level education in Cyprus and abroad. Figures in 1992 show that about 58% of the total secondary school leavers continue their studies beyond the secondary level. About 24% attend higher educational institutions abroad and the other 34% in Cyprus.

The following table 1.10 summarises the existing educational situation in the island during the 1992 - 1993 school year.

Table 1.10 - Educational situation 1992-1993

Level of education	No. of schools	No. of pupils	No. of teachers	Pupil-teacher ratio
All full time education	968	137.379	8.817	15,6
Pre-primary education	428	16.210	717	22,6
Primary education	386	62.452	3.266	19,1
Secondary education	118	52.190	4.314	12,1
Third-level education	27	6.210	450	13,8
Special education	9	317	70	4,5

* The schools in the occupied by the Turkish troops area are included:

No. of schools	No. of pupils	No. of teachers
3	40	4

1.4.4 Health Services

The medical needs of the population are met through three general systems of Medical Services:

The Government Health Sector

The Private Health Sector, (which are the main systems), and

A number of schemes covering specific sections of the population.

(a) The Government Health Sector provides medical and health care free of charge mainly to refugees, to the army and civil servants and their dependants. Medical care free of charge or at reduced rates, is also provided to all citizens of a low or middle income.

Further, medical care free of charge is provided in all cases receiving treatment at the Accident and Emergency Departments irrespective of the economic situation or the nationality of the person involved including visitors. However, if these cases need hospitalization subsequent care fees have to be paid.

The services offered by the Government are primary secondary and tertiary health care services.

(b) The private health sector, is open to all those who can afford to pay for their treatment.

(c) A number of schemes which cover specific sections of the population. These include:

(i) Medical Services provided by the Trades Unions to the employed persons and their dependants. These services provide mostly primary health care. The above schemes use both the government and private sector whenever secondary or tertiary care services are needed, through a partial reimbursement of medical expenses.

(ii) A number of employer-sponsored arrangements, all of which provide free medical care mainly through public health facilities.

Apart from the curative services offerd by the public and private sectors, the public services, in cooperation with other Ministries and the Municipal Authorities, are concerned with the provision of preventive health services in the form of health education, inoculations, control of epidemics and infectious diseases, the disposal of sewage, the control of the quality of drinking water, food etc.

While the private sector is mainly concentrated in the urban areas, the public health services provide adequate coverage for the rural areas, ensuring accessibility through a network of rural hospitals, rural health centres, subcentres and dispensaries. These services are staffed with doctors, dentists, pharmacists, nurses, health inspectors and health visitors who ensure the provision of adequate services. At the end of 1992 the number of persons per doctor stood at 428, while for dentists it was 1.213. There were 56,9 general and specialised hospital beds per 10.000 people and the ratio of persons per bed was 176.

It is well known that health standards depend not only on the availability of health resources such as hospitals, doctors, nurses, but also on general environmental conditions. Cyprus has been fortunate to have a mild temperate climate, while the absence of heavy industry has meant that air pollution has been limited. In addition, the standard of education and early attempts at provision of piped water, sewage disposal and good sanitation meant that the right hygienic environment has been created.

Indeed, the standard of health of the Cypriot population can be considered quite high. Already expectancy of life at birth has reached 78,6 years for women and 74,1 years for men. Birth rates have fallen to about 18,6 per thousand of population while in fact mortality rates have been successfully contained to 10 per thousand of population. The crude death rate stands at 8,8 per thousand of population.

Cyprus has been successfully freed of common infectious and parasitic diseases and the pattern of morbidity resembles that of developed industrial nations with cardiovascular deseases, malignancies and car accidents predominating as the major causes of death. It should be pointed out that Cyprus has successfully eliminated malaria in the past and more recently echinococciasis through the implementation of special campaigns.

Current educational and preventive programmes are proving successful in almost eliminating the incidence of thalassaemia which has been an important health problem.

The public Psychiatric Services are being decentralised. A network of services in all districts is gradually being set up so that they are directly accessible to the community (primary and preventive services, nursing services at home, psychiatric clinics in hospitals, day centres etc.). Also, specialised services have been established such as for child psychiatry, detoxification and family therapy. As a result of these developments, the number of institutionalised patients has been reduced substantially.

1.4.5 Crime Reported

Crime in Cyprus is maintained at low levels which is greatly attributed to the effectiveness of the Police as well as to the prompt co-operation of the public. The number of cases of serious crime and their detection rate, on the basis of international statistics, is considered satisfactory, as shown in the following figures for the period 1991-1993.

Year	Cases of Serious Crime	Detection
1991	3.626	57,25%
1992	3.811	64,31%
1993	4.302	64,44%

Inspite of the satisfactory situation, the Police aims at further improvement in view of the island's geographical position and its ever increasing multifarious interaction with other nations in the area.

In accordance with the statistics of the Council of Europe, Cyprus has one of the lowest prison populations among the member-states of the Council of Europe for every 100.000 inhabitants.

1.5. POLITICAL PROBLEM

The Turkish invasion of Cyprus in July and August 1974, and the subsequent occupation of 37% of is territory by the Turkish army, resulted in both the displacement of almost two hundred thousand Greek Cypriots and the destruction of the country's prosperity and development prospects. This tragic situation was aggravated by the

fact that the area of the Republic which fell under the occupation of the Turkish armed forces was the most productive and developed part of the island. It accounted for approximately 70% of its economic potential.

The invasion, it must be stated and emphasized, bequeathed immense and devastating socio-economic consequences to the population of Cyprus. The following figures provide a telling indication of the amount of the appalling destruction that Cyprus suffered and continues to endure, by the invasion: 67% of the tourist accommodation capacity was lost, while 45% of the livestock productivity was permanently destroyed. The island's agricultural exports were reduced by 48% and the industrial output was diminished by 46%.

Turkey massively violated basic human rights and fundamental freedoms of the people of Cyprus and systematically altered the historical and demographic character of the island. Furthermore, it continues to this day to prevent any movement towards a just and viable solution of the Cyprus problem in accordance with the UN Resolutions and Decisions, which, as a result, remain unimplemented. Nearly 200.000 Greek Cypriots, representing one third of the total population of Cyprus and 80% of the population of the occupied areas, were forcibly expelled from their ancestral homes and properties by the Turkish army and became refugees in their own country.

Turkey refuses to this date to allow them to return. Their properties were distributed by the occupying forces to persons other than their legal owners, including Turkish soldiers and illegal settlers from mainland Turkey, estimated at about 70,000.

As a result, the displaced persons were forced to move to the Government controlled areas of the Republic, abandoning 36% of the housing stock, thus increasing dramatically the population residing in the part of the island under the control of the Government of the Republic.

Confronted with such a tragic and pressing situation, the Government of the Republic of Cyprus had to take immediate measures to meet the socio-economic needs of the refugees. Every effort was exerted to accommodate them in the best possible way.

During the first stages, the Government provided the refugees with termporary accommodation in tents in 25 designated refugee camps, for about 25.000 displaced, persons who were unable to find alternative accommodation. At the same time, the Government initiated and implemented a long term strategy, in order to increase the housing stock qualitatively and quantitatively.

Such strategy has been aiming at providing better accommodation to as many refugee families as possible, under a variety of housing schemes pending a solution of the Cyprus problem, a prospect that will enable all refugees to return to their homes. In addition, it ensures that the refugees enjoy the same standard of living as the rest of the population. It must be stressed that in implementing its housing policy, the Government has received valuable financial assistance from the United Nations High Commission for Refugees and other United Nations Agencies and friendly countries.

Since the early 1980's, following some easing of the extreme pressures in refugee housing needs, the Government has been formulating a long term policy. Its objective is to provide for the housing needs of low and middle income non-refugee families and those families, among the population in general who live in rural areas, for whom state and is prerequisite to secure proper housing conditions.

PART B

2.0 URBAN AND RURAL SETTLEMENTS AND PLANNING

2.1 URBANIZATION

Both the past and future development of Cyprus reflect her geographic position, size, climate and resource structure. The centuries-old pattern of life in the Island was transformed significantly in the 20th century. The country could be classified as a territory of old agricultural civilization, where urbanization was just beginning. By the end of World War II there had been significant economic changes that facilitated the transition from an agricultural economy to a commercial economy which centered on towns and led to a rapid drift of population to urban centres.

Rising employment opportunities attracted more and more people to the towns and as their incomes rose the demand for goods and services was further increased. At the same time the mechanization and reorganization of agriculture, which had taken place in the post-World War II years, caused a surplus of rural economically active population. This excess population turned mostly to the towns where employment opportunities were greater than those offered by the rural areas. Thus, whereas in 1946 only 26 percent of the total population lived in towns, by 1960 this had risen to 36% and in 1973 to 42%. In 1992 more than two thirds of the total population lived in urban areas (Table 2.1).

Table 2.1: Urbanization Trends

Year	Total Population	Urban Population	Percent of Urban to Total Population
1946	450,114	115,800	25.7
1960	573,566	206,000	35.9
1973	631,778	266,900	42.2
1982*	512,098	325,386	63.5
1992*	602,025	407,324	67.6

* The figures refer to the Government controlled area

The peak period of urbanization (1946-1960) coincided with the transition from a dominantly rural-based economy to a commercial and industrial economy that favoured the growth of towns. It is worth noting that between 1946-1960 the annual urban rate of growth was 4.2% as opposed to 0.7% of rural growth.

Another peak in urbanization occurred in the post - 1974 period as a result of the Turkish invasion of the Island which brought forced urbanization, with the displacement of 200,000 people from their homes, largely rural. Most of the displaced persons were termporarily rehoused in and around the existing urban centres where employment was readily available or could more easily be provided.

2.2 IMPACT OF URBANIZATION ON SETTLEMENTS

Since 1974, new significant changes in the structure of settlements have been witnessed as a result of the boom in international tourism. Coastal villages have grown into major tourist centres, notably Ayia Napa and Paralimni in the south-east coast of the Island. Meanwhile, the coastal towns as well as Nicosia the capital, are continuing to grow, mainly at the expense of the rural settlements, especially the remoter ones which find it increasingly difficult to sustain their past levels of population.

The rapid development of the urban areas has caused a lot of deformation and changes to the character of both urban and rural settlements. The central parts of the towns are suffering from their haphazard and congested layout which, in turn, give rise to traffic congestion and general difficulties of circulation, servicing etc. In addition to the above, the most obvious phenomenon of the last twenty years has been the rapid growth of the suburbs into what was previously open country. Whereas formerly the majority of the newer houses and other buildings were built within a small radius of the original core, the growing affluence and increased mobility have led to the urban "sprawl".

Most serious planning problems today relate to the sudden expansion of the four main urban centres of Nicosia, Limassol, Larnaca and Paphos, primarily as a result of the displacement of the Greek population by the Turkish army from the settlements in the northern parts of the Island. While Larnaca was planned to grow to 40,000 by the end of the century, it has already

surpassed this level, but without the necessary services and infrastructure. Similarly, Limassol was planned to grow for the same period to 135,000, yet it already has a population of over the above figure.

The most important characteristics of land use change arising from haphazard urban expansion are the shrinking of agricultural land in favour of residential land; fragmented settlement and isolated buildings in the countryside, unconsolidated growth often coupled with insufficient services; and a spatial pattern of land use in the fringe areas that is heterogeneous and unstable.

Parallel to rapid residential growth, the fringe areas have witnessed an influx of other urban uses such as industrial, commercial and institutional. All these have a very negative impact on the physical and human environment caused by industrial wastes, increased levels of traffic congestion, air and noise pollution, lack of open space, lack of adequate facilities and infrastructure, loss of agricultural land and visual deterioration.

2.3 DEVELOPMENT OF RURAL SETTLEMENTS

The rural settlements are usually sparse and small, scattered over the entire Island. Most of them are of the nucleated, cluster type. As mentioned previously, in 1992 only 32% of the total population lived in rural areas, compared with 58% at the time of the Turkish invasion in 1974.

Rural population growth is uneven. Villages near the towns experience high rates of growth, both in terms of population increase and physical growth, whereas villages in the remoter mountainous areas with less accessibility are losing population.

Among the main problems facing rural settlements are:

(a) Declining villages - most of the rural settlements are in this category and consist of the remoter villages where commuting is difficult due to low accessibility and where incomes rely overhelmingly on agriculture with little or no alternative employment.

(b) Deficient provision of services - the lack of fairly large agro-towns in most parts of the countryside makes the provision of intermediate services difficult.

(c) A lower standard of living and lower incomes than the urban areas - as a result many Government programmes give high priority for the development of the living conditions and the solving of the acute problems of the depressed rural regions. Government policy for these regions is implemented through integrated development programmes and other programmes such as agricultural development, primarily through irrigation schemes as well as infrastructural works such as road improvements, water supply, etc. Integrated rural development, broadly conceived, means rural transformation through increased production and productivity, better income distribution and improved social and physical infrastructure.

2.4 TOWN AND COUNTRY PLANNING: LEGISLATION AND ADMINISTRATION

Until 1972, Cyprus had no comprehensive planning legislation either at the national/regional or the local levels. Physical development was taking place in an ad hoc and haphazard fashion and there was no opportunity to regulate overall development. In order to rectify this, the Government had introduced the Town and Country Planning Law of 1972 which, however, was only partly implemented due to the upheaval from the Turkish invasion.

In 1990, legislation concerning the enforcement of urban and regional planning was eventually implemented in order to make sure that physical development would be at pace with social and economic development. The strategic objective of this legislation is to support further socio-economic progress, creating opportunities and exploiting the physical potential of specific areas of the island, while promoting environmental protection in accordance with contemporary sustainable development strategies. After five years of implementation of the Planning Legislation, Government uses the experience gained and focuses on improving the efficiency and performance of the Planning System during the period 1995 - 2000.

Today, physical development in the Island is promoted and controlled according to the provisions of approved Development Plans: the four Local Plans concerning the main urban centres and the Statement of Policy for the rest of the Island's territory, which is mostly rural. A process for the preparation and approval of five aditional Local Plans, which are related to specific geographical areas where rapid development takes place, is currently under way.

Local Plans contain policies and measures for the control of physical development, which is initiated mainly by a very active private sector. Special emphasis has been focused on the need for protecting the amenities and the general welfare of the local population, as well as on the protection of the quality of the very sensitive insular environment, according to the principles and the objectives of the strategy for sustainable development.

The strategy for all Local Plans, which provides for the containment of major physical development within defined development boundaries, is expected to encourage the optional use of very scarce land, while guaranteeing that other environmental resources are used in the best interest of the present and future generations as well. In general, Local Plans contain policies concerning the spatial distribution of major land uses, the enforcement of appropriate development densities, which are related to the environmental carrying capacity of specific areas, and the provision of necessary infrastructure in terms of transportation and other infrastructure, community facilities and services, the system of public open spaces, etc. In addition, they contain policies for the protection of a very rich architectural and cultural local heritage and for the appropriate re-use and revitilization of traditional buildings and areas through the preparation of Area Schemes for specific geographical areas, primarily in the town centres.

The very special concern of the state on the conservation and protection of the local environment and its qualities is evident throughout the provisions of all Local Plans, as many of these qualities have been under heavy pressure due to the very rapid development of tourism, industry, and other sectors of the local economy.

Finally, the Town and Country Planning Law provide for public participation in the preparation of bot Local Plans and Area Schemes. However, the provi sions for participation of the public at large ar somewhat restricted and even though it is a consider able improvement, compared to past practices, ther is no effective forum for the public at large to tak part in the process.

2.5 URBAN TRANSPORTATION

2.5.1 Present Situation and Problems

The origins of all towns in Cyprus date back t medieval times. The concentration of the traffi attracting activities in the town centre has produce a radial pattern of desired lines and consequently radial road system. In many instances this radia system has been broken by either the construction o by-passes and ring roads or by the juxtaposition o routes linking traffic attracting uses located out side the historical town centre. These, however have been intuitive attempts to improve the existin road network and satisfy new demands in terms o traffic circulation. It is only recently that th subject of urban transportation has been regarded bot as a function of land use and population cencentratio and as an integral part of the urban structure.

In relation to the above, it is worth noting tha comprehensive transportation studies have been car- ried out recently for the towns of Limassol, Larnac and Paphos. These studies, which were completed i 1993 and 1994 have been conducted by foreign expert in collaboration with Cypriot consultants. The gen- eral aim of the Studies was to provide each stud area and its environs with the means to address th demands made upon its road based transport syste over the next two decades. Specifically, thei objectives were to:

(a) develop a series of measures, principally manag- erial and at low cost, which will accommodate th vehicles using the road system in the forthcoming years and reconcile the demands of private cars, buses, taxis, freight vehicles and pedestrians;

(b) recommend an institutional, regulatory and financial framework within which the system might operate;

(c) improve safety of movement, especially for pedestrians; and

(d) identify priorities for road investment which would complement Government development strategy and any acceptable methods of funding road provision, signalling improvement, or management.

One of the major conclusions of the three transportation studies is that all major towns in Cyprus are faced with the same deficiencies of the existing road network and the same traffic problems. Undoubtedly, the most acute problem facing Cypriot towns is traffic congestion which, over the last few years, has become more widespread in the absence of appropriate remedial measures. What is becoming alarming is the lack of adequate car parking provision within and around the C.B.D. and the poor utilization of public transport facilities which accentuates car parking problems. Furthermore, the fact that most primary road arterials perform the dual function of a major transportation corridor and of a commercial activity spine not only reduces considerably their capacity but also creates vehicular - pedestrian conflicts which, in turn, results in the deterioration of the living and working environment. The serious lack of adequate infrastructure for pedestrians (pavements, pedestrian precincts etc.) has been found to be a major contributing factor in road accidents involving pedestrians.

It should be noted that the road network which is proposed for in the Local Plans of the four major towns of Cyprus (Nicosia, Limassol, Larnaca and Paphos) has evolved from the study of the following characteristics of each town:

(a) existing and proposed distribution of land use;

(b) existing transport system;

(c) existing and anticipated traffic patterns and car parking deficiencies;

(d) redevelopment possibilities and limitations of the existing urban fabric and especially the town centre;

(e) anticipated population growth;

(f) transport connection with other towns and traffic through the town centre;

(g) commuting from peri-urban settlements;

(h) urban sprawl; and

(i) environmental considerations.

2.5.2 Public Transportation

The data in Table 2.2 show that only a small proportion of the permanent population of the major towns in Cyprus use public transport as a mode to work on a daily basis as opposed to the great majority of people who rely on the use of the private car for their trip to work. The very low degree of utilization of the public transport system in urban areas can be explained by the following factors:

(a) low residential densities which make the operation of the system not a viable economic venture;

(b) high car ownership rate (Table 2.3);

(c) poor quality of buses, limited choice of bus routes and unreliable bus route frequencies; and

(d) high standard of living;

In Cyprus, public transport services are provided by the private sector. In the absence of subsidies fares are, therefore, the sole source of revenue. However, operators are not completely free to decide fare levels. Fares policy is, in fact, determined and administered by a Prices and Fares Commission which attempts to ensure that the operator makes an adequate return of 10% - 15% on paid-up capital.

Table 2.3 provides additional data on a number of relevant transportation indicators which show, in part, the general state of the transport sector in Cyprus.

2.6 STRATEGIES AND POLICIES

The gridiron road layout which has been adopted in the Local Plans and confirmed by the transportation studies, is probably the best geometric arragnement in solving the existing transportation problems and in providing the best framework for the future development of each town. The interplay between the proposed urban transportation system and town planning policies incorporated in the Local Plans of the four major towns in Cyprus can be demonstrated by the following strategies:

(a) In order to curtail unnecessary trips to the town centre, reduce traffic congestion and the need for car parking, shopping facilities as well as employment opportunities are provided along "activity spines" and at "activity nodes" which are situated at strategic locations at some distance from the town centre;

(b) The proposed in the Local Plans gridiron system of primary distributors (high capacity arterials with limited access), is strengthened around the C.B.D. in order to cope with the increased demand in road capacity caused by the intensity of activity in the town centre area;

(c) Traffic congestion is reduced by the treatment of some of the proposed primary distributors in such a way as to act as by-passes for the town as a whole in the case of external traffic or for the town centre in the case of internal traffic;

(d) Several town planning policies incorporated in the Local Plans favour the consolidation of the existing "thin" urban fabric and discourage urban sprawl and the unnatural growth of peri-urban villages which takes place at the expense of the town they surround. The primary aims of these town planning policies are to encourage public transport, reduce commuting costs and increase the degree of utilization of the existing infrastructure provision;

(e) The residential areas which form the cells of the gridiron network of primary distributors, defined as "Environmental Areas" are safeguarded against any through traffic by not allowing any "short-

cut" routes through them; the two tier hierarchy of roads provided within the residential cells (collectors and access roads) aims to create an environment more appropriate to residential areas, with low traffic volumes, low vehicle speeds, lower levels of noise pollution and vehicle emissions and lower accident rates, particularly involving pedestrians;

(f) In order to promote conditions of safety and a comfortable living environment a policy has been adopted for the segregation of vehicular-pedestrian traffic in the busiest parts of the C.B.D., the creation of pedestrianised precincts and the use of traffic calming measures.

Further to the above strategies and policies, which primarily relate to the urban transportation-transportation link the Government of the Republic of Cyprus over the next few years will actively pursue the following tasks:

1. <u>Improving the quality of life in Urban areas:</u>

Urban development patterns and lifestyle preferences seem to affect the quality of life in most urban centres and other economic growth poles in the Island. The widespread use of private cars, the geographical extent of urban areas, the dispersal of industrial and workshop uses in residential areas and the deficiency in organized public open spaces are major issues which will be tackled effectively by the Planning System. The improvement of public transport will also be pursuit during the next five year period, as it offers new possibilities for upgrading the quality of life in most urban areas of the island.

2. <u>Bridging regional disparities in terms of infrastructure and the provision of services:</u>

Although in general infrastructure and service provision in Cyprus compares favourably with most developed countries, there are differences between urban and rural regions of the island. As mentioned before, during the next five years the Government will work for improving provision in most rural areas (mainly in mountainous regions of the island) in order to narrow notable regional desparities which eventually lay at the roots of urbanization trends

and rates. Achieving a new balance in this respect, while at the same time promoting rural economic development and creating new employment opportunities locally, will encourage rural population to remain in their area of origin.

3. **Addressing the consequences from the division of the island upon the settlement system:**

The prolonged division of the island's territory has had a destructive impact on the settlement system on the Island. Population distribution, the functioning, relations and interconnections which have been established through centuries have literally been disconnected by artificial boundaries dividing cities (i.e. Nicosia), severing communication networks (national and regional road systems), enforcing the duplication of major infrastructure (airports, ports, power plants, etc.) and braking up social and cultural ties (the braking up of human communities). The Government of Cyprus works for a political solution of the Cyprus problem, in which case the above mentioned problems will be addressed in a systematic way. At the same time, Government Development Plans have an in-built element of robustness and flexibility for safeguarding the potential for the eventual re-unification of the island.

Table 2.2 - Daily Trips by Combined Purpose and Transport Mode

	Town							
	Nicosia		Limassol		Larnaca		Paphos	
Transport Mode	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Private car	245.600	62.4	222.980	66.4	77.280	68.5	29.300	71.0
Bus	43.550	11.1	36.300	10.8	7.150	6.3	2.040	5.0
Non-motorised	61.450	15.6	53.550	15.9	13.730	12.2	5.990	14.5
Other	43.100	10.9	22.890	6.9	14.720	13.0	3.950	9.5
TOTAL	393.700	100.0	335.720	100.0	112.880	100.0	41.280	100.0

Sources: Nicosia Transportation Study, Public Works Department, Ministry of Communications and Works, Nicosia, 1987.

Limassol Transport Study, Colin Buchanan and Partners, Nicosia, 1994.

Larnaca Transport Study, Colin Buchanan and Partners, Nicosia, 1993.

Paphos Transport Study, Colin Buchanan and Partners, Nicosia, 1994

Table 2.3 - Selected Transportation Indicators

Indicator	Explanation of Data
Travel time	90 percent of all work trips in urban areas are of less than 20 min. duration 1994.
Transport fatalities	.00022 per 1000 population (1993)
Fuel Price*	Petrol: 81.1 US cents per litre Diesel: 23.9 US cents per litre
Roads in poor repair	22.7 percent of the total (1992)
Expenditure on road infrastructure*	144.91 US $ per capita (average of 1992, 1993 and 1994)
Automobile ownership	95 : 100 (Ratio of automobiles to people of driving age - (1992)
Public transport seats	56.6 per 1000 population (1994)

Sources: Department of Statistics and Research, Population Censuses
Department of Statistics and Research, Transport Statistics
Ministry of Finance
Ministry of Communications and Works
Planning Bureau
Limassol Transport Study, 1994
Larnaka Transport Study, 1993
Paphos Transport Study, 1994

* Exchange Rate: 1 CYP£ = 2.21 US $ (September 1995)

PART C

3.0 ENVIRONMENTAL PLANNING AND MANAGEMENT

3.1 EXISTING ENVIRONMENTAL PROBLEMS

The rapid socio-economic growth of Cyprus especially in the 1980's, besides its desired social and economic effects, caused strains on the natural fabric. However, despite its partial degradation from increasing conflicting demands on scarce land, water, coastal, scenic and other resources, the quality of the environment in Cyprus remains on the whole quite satisfactors.

The main environmental problems Cyprus faces and for which action to tackle them has been or is being taken are the following:

Turkey's military invasion of Cyprus has been, among others, responsible for the most serious threats to the Cyprus ecosystem in recent centuries, as it brought about an almost complete division of all the ecological and environmental parameters and dimensions of the country. The word "almost" is simply used to exlude the air, climate and rainfall.

The illegal division of Cyprus with the Attila line and the occupation of about 37% of the country, has resulted in the artificial creation of a new situation as regards to the demographic composition of the occupied part, with the eviction of the Greek population.

The forceful eviction of 200.000 people within a week and their temporary resettlement in the free parts of the island has contributed significally to the extremely rapid urbanization of the free parts of the country with a lot of associated environmental problems.

The illegal introduction of an entirely foreign element into the island's ecosystem [the army of occupation, 40.000] and settlers from the deepest Anatolia [80.000], also constitutes an ecological sore with various negative environmental impacts.

The demands for water are causing concern, as well as pressures on its quality, in some areas, from effluent and agrochemicals. Pollution problems of local significance in a number of areas have been created by the disposal of untreated industrial effluent. In addition, some of the most important aquifers have been overpumped and sea water has intruded into them.

The quality of the air, although considered to be generally good by European and other standards, has to be safeguarded, particularly in the light of the spiralling number of motor vehicles and the presence of localized hot spots of pollution.

The marine environment, being of special importance to Cyprus, requires the utmost care and the country is vulnerable to marine pollution incidents. Protection of the sea and of the coastal waters and the aquatic life are priority concerns.

The integrated management of the coastal zone and the rational planning and control of the multitude of conflicting activities is also a priority concern.

Wildlife habitats, the great variety of which has been the main reason for the high endemism that characterizes the species in Cyprus, are subjected to pressures from encroaching development and require further protection and management. So does conservation of biological diversity and the protection of endangered species.

In the agricultural sector, soil erosion, use of weed killers and agrochemicals and the losses of prime agricultural land to other uses, are some of the most important concerns.

The control of noise from installations, machinery and activities is a problem of increasing dimensions.

Waste issues are also causing concern, as well as the need for the management of hazardous waste, and for the policing of territorial waters to prevent the dumping of hazardous waste.

Strains are imposed on public agencies involved in environmental management and protection, either from the proliferation of laws and programmes, or for the implementation of international conventions, such as the already ratified Basel and Vienna Conventions.

3.2 THE RESPONSE

Cyprus has endorsed the principles of sustainable development and has undertaken a process to integrate environmental considerations into those of its economic and social development policy, and to ameliorate those aspects of development policy that may run contrary to the principles of sustainable development. In view of the stage Cyprus socio-economic development has reached, development objectives are pursued in conjunction with the preservation of the natural environment and the development effort is gradually readjusted, so as to be implemented in line with the concept of sustainable development.

3.3 THE INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL PLANNING AND MANAGEMENT

In the last few years the Government of Cyprus has put together a number of measures (legal, administrative and institutional and technical) as part of an overall environmental policy. The following are some of these measures with a direct or indirect relevance to the environment in human settlements:

An institutional set up for the formulation, implementation and coordination of environmental policy has been in place since 1987, is working adequately and it is progressively enhanced.

The Council of Ministers has the overall responsibility for the formulation of environmental policy, being the higher executive and policy-making body.

Environmental policy is applied by the Council of Ministers through the Minister of Agriculture, Natural Resources and Environment, who is the Minister responsible to administer overall control and co-ordination over the protection and preservation of the environment (excluding town and country planning issues).

The Council for the Protection of the Environment is the higher advisory body on environment and development, its members being representatives from governmental and quasi-governmental agencies, the business and technical sectors and local government. The Council is chaired by the Minister of Agriculture, Natural Resources and Environment, advises the Minister on environmental issues, makes recommendations on environmental policy and legislation, coordinates public and private action on the protection of the environment, informs the public and pursues environmental awareness activities and debates environmental problems. The Council's mandate was recently expanded and will now also act as a forum on sustainable development.

The Environment Committee is chaired by the Permanent Secretary of the Ministry of Agriculture, Natural Resources and Environment and its members are the Permanent Secretaries, or their representatives, from various Ministries and agencies with executive responsibilities on environmental or environment-related issues. The Committee reviews environmental programmes, advises on the formulation and determination of environmental policy objectives, further refines environmental policies, acts as an overall coordinator among Ministries and resolves conflicts.

The Environment Service is placed at the Permanent Secretary's Office and among others is the coordinating service for Government programmes for the protection of the environment, heads the technical committee on environmental impact assessments, advices on environmental policy, is mandated to ensure the implementation of the environmental policy, administers parts of the Law on the Control of Water Pollution, coordinates the process for the adoption of the European Union's environmental policy and legislation, promotes environmental awareness, training and information and is the National Focal Point for the Commission on Sustainable Development, INFOTERRA, UNEP, the Basel Convention, CITES, the Bern Convention, the Montreal Protocol and the Biological Diversity Convention.

The environmental framework operates in parallel with the physical planning framework, responsibility for which is under the

Ministry of Interior, the structure involving the Minister, the Planning Council, the Department of Town Planning and Housing and local councils. This framework is interlinked with the environmental framework, the Chairman of the Environment Committee being a member of the Planning Council, the Director of the Department of Town Planning and Housing being a member of the Environment Committee and of the Council for the Protection of the Environment and the Director of the Environment Service sitting in at the meetings of the Planning Council.

Implementation and enforcement of specific sectoral aspects of the environment is carried out in accordance with specific laws and regulations by a number of Ministries, Departments and Services in the subject-matter areas of their respective responsibility. All main line Ministries with executive responsibilties on environmental issues participate in the Environment Committee and the Environment Council.

3.4 NEW ENVIRONMENT - SPECIFIC LAWS

A number of environment-specific legal acts have been put in place enabling the enforcement of protective measures. These laws, guided by principles which are in line with relevant European Union legislation are the following:

- The Control of Water Pollution Law (1991)
- The Control of Atmospheric Pollution from Industrial Sources Law (1991)
- The Dangerous Substances Law (1991)
- The Agrochemicals Law (1993)
- The Pollution of Public Spaces Law (1992).

Regulations and orders for the full implementation of the above laws have been approved or are under various stages of preparation.
In the new pollution control laws, authority is given to determine, through regulations, quality targets and objectives for the waters and the atmosphere; establish maximum emission levels of pollutants; issue licenses with conditions with regards to the discharged wastewater and industrial effluent; regulate agricultural and other practices which might cause pollution of waters; provide for the compulsory registration of registrable industrial sources of atmospheric pollution and the issuing of registration certificates with operating conditions; the imposition of technical specifications; and the installation of effluent or discharges monitoring equipment.

3.4.1 Bill on a Framework Law on the Environment

The draft of a comprehensive Environmental Framework Law is now under finalization.

The proposed new law is aimed to address the institutional and administrative framework for environmental planning; introduce the principles under which sectoral legislation would be implemented in an integrated way; cover land pollution, hazardous waste management, environmental fiscal instruments, environmental impact studies and a variety of other issues. Principles to guide the environment-specific legislation addressed by the proposed Framework Law, include civil liability; environmental compensation schemes; compensation for damage to certain wild plants and animals; implementation of the polluter-pays principle; and emergency powers to take immediate action or ask for an injunction to stop activities detrimental to the environment.

3.5 ENVIRONMENTAL IMPACT ASSESSMENT

Since 1988, it has been the declared policy for environmental impact assessments to be carried out for all major public development projects. An Integrated System for Environmental Impact Assessment was approved by the Council of Ministers in 1991, preceded by a relevant decision for the examination of requests for mining and quarrying licences, taken in 1990. The system is based on European Union Directive 85/337 and UNEP's relevant methodology. There is no specific legislation for EIAs but in the draft of the Environmental Framework Law relevant provisions are to be included with subsequent regulations to be prepared, under the project for the Framework Law on the Protection of Nature. Currently, the implementation of the system is part of the project licensing/authorizing procedure and the provisions of the Mines and Quarries Law, the Town and Country Planning Law and the Fisheries Law are utilized.

Projects for which the procedure is applicable include tourist installations, aquaculture projects, ports, marinas, fishing shelters and breakwaters, wastewater treatment plants, solid and liquid disposal areas, dams, major roads, quarries, industrial areas, airports, etc.

An interministerial technical committee with wide representation oversees the system, coordinated by the Environment Service.

3.6 WASTE MANAGEMENT AND DISPOSAL

3.6.1 Wastewaster

Cyprus is at present in the midst of high economic growth with increasing demands for improved living standards. This inevitably reflects on the need to improve the standard of Sanitation in Cyprus, which translates to improved and increased sewage management, in a manner that will eliminate any adverse impact on the human and natural evironment and contribute the effective reuse of water, a limided commodity in Cyprus. In more developed

countries like Cyprus where this basic level of Sanitation exists in a satisfactory manner, other issues usually govern the demand for improved sanitation. These are:

- The protection of the natural environment i.e drinking water, natural sources, the habitat of rivers, dams and the seashore.

- The improvement of the aesthetics of the communities by the elimination of visual and odour nuisance from overflowing absorption pits.

- The collection, treatment and reuse of treated sewage as a method of conservation of water.

The occupation of almost 40% of the country has created a big shift of population which as a consequence created an immediate demand for the construction of "temporary" housing estates for the refugees, many of which were unfortunately built over clayey areas with limited absorption capacity. For these housing estates we had two options: (a) Connect the sewerage system of the housing estate with the central sewerage system of the town or (b) construct their own sewerage systems followed by treatment of the sewage in a sewage treatment plant.

The following table shows the present situation of urban and rural areas covered by central sewerage systems. (Urban areas are those defined by the local plans and include the municipal area).

Table 3.1 Urban and Rural areas covered by central sewerage systems.

	Urban	Rural	Total
Nicosia	72% (178,000)	28% (70,000))	248,000
Famagusta	0%	31,000	31,000
Larnaca	60% (61,000)	40% (41,000)	102,000
Limassol	78% (136,000)	22% (38,000)	174,000
Paphos	61% (32,000)	39% (21,000)	53,000
		TOTAL	608,000

Urban population served by a sewerage system is 17% and within the next 5 years will increase to 31%. Rural population served by a sewerage system is 2,0% and is expected to increase to 16% within the next 5 years, with the construction of central sewerage systems in another twenty villages.

The urban population of Cyprus exceeds 67% of the total population. The rural areas of Cyprus show a poor picture. Only 2,0% of the rural population has so far received a central sewerage system, but all rural villages have piped water systems.

Currently Cyprus has no general law on waste management. The existing sewerage law (passed in 1971) is to foresee the establishment of central sewerage systems, their control and administration, treatment and disposal of sewage. This law was followed by the sewerage board of Nicosia Bye-Laws in order to administer the creation of the first sewerage board in Cyprus. Now in Cyprus there are sewerage boards in all cities and in some other coastal Municipalities.

The control of water pollution law - 69/1991, is to foresee the elimination or reduction and the control of the pollution of the wastes in Cyprus for a better protection of the natural water sources and the improvement of the environment.

Nicosia, the Capital City, and Limassol, a coastal town, are served by a central sewerage system. It should be added, however, that a central sewerage system is at it's final stage of construction for the town of Larnaca and also for two important tourist centres (Paralimni and Agia Napa), construction of the central sewerage system will begin towards the end of the year 1996.

Also nearly all hotels, and escpecially the new ones, in the coastal areas of Cyprus have their own private sewage treatment plants until the operation of the towns central sewerage systems where they are obliged to connect to it. In these cases the effluent is treated to a quality of 20 B.O.D. 30 S.S. or 15 B.O.D. and 15 S.S. (according to the final disposal of the treated effluent. Either for irrigation of fodder crops or for gardens and landscaping in general.
In the remaining areas where they are not served by a central sewerage system or private sewage treatment plants, the traditional system of Septic tank-absorption pit is applied taking always into consideration any adverse effects on the ground water of these areas.
The cost of central sewerage systems is rather high. This varies from c£500-1.000 (VS £1000-2000) per capita (c£2.000 - c£4.000 per household of four persons) depending on the size of the community to be served. The operating expenses per year of such a system is in the order of c£20-25 per capita/year (or c£80-100 per household of four persons). In the cases of private sewage treatment plants the maintenance and operation of these small plants comes to about 50-60 cent/m^3 of treatment water.

3.6.2 Objectives

It's obvious that there is an urgent need for a clear strategy to eliminate the adverse effects which have been created from the inadequacy of existing sewage collection, disposal and treatment system, especially in rural areas.

3.6.3 Action for Consideration

(a) Identify priority village areas and preparation of a five-year plan for immediate implementation of specified systems.

(b) Set minimum standards and encourage treated waste water re-use in order to reduce clear water consumption for irrigation.

(c) Ensure the maintenance and monitoring the ongoing operation of existing and new facilities, so that receiving waters or land are not made unfit for the further intended use and the rights of downstream users are protected.

(d) Provision of approved or appropriate sites for disposal of septage.

(e) Involve the Public at the very early stage of development of proposed solutions. Their imput is often important for the successful implementation of any solution.

(f) Possible sources of subsidies to install and to operate rural sanitary systems and in some cases industrial waste treatment plants should be investigated. The Government very recently has undertaken the responsibility of subsidizing private industries for an amount of up to 30% of the capital cost of their waste treatment plants.
The long term solutions to avoid pollution of the sea, land and subsurface waters is to install central sewerage treatment plants and the operation of such plants should be under control of a central national body or organisation.

(g) Introduce a system in close corporation with European Union on issues of treatment technology, administration, legal and environmental.

(h) Complete and upgrade the existing legal systems.
Cyprus, as it was mentioned before, is a developing country and protection of the environment is not a marginal problem but a priority problem and as it was comfirmed in the Rio Declaration on Environment and Development there can be no real environmental protection and environmental conservation unless there is a proper harmonization with economic and social development.

3.6.4 Solid wastes

The solid waste management practices especially in rural areas of Cyprus are inadequate largely as a result of increasing waste volumes caused by improved standards of living coupled with the lack of suitable disposal mechanisms. Urban areas in Cyprus have a reasonably good, collection system of solid wastes which are disposed in central landfill sites.
The villages lack a consistent system of waste collection particularly the more remote mountain villages. Where regular collection service does not exist, the frequency of collection varies from one per week during the cooler winter periods to twice per week during the summer period.
Ever increasing volumes of waste coupled with negative public opinion respecting landfills is making it more and more difficult to select new disposal sites at a time when existing sites are running out of capacity.

Every year the amount of approx. 368,800 m3 of waste is produced in Cyprus divided into 5admin. districts. Nicosia, Limassol, Larnaca, Paphos, Famagusta. It is predicted that waste amounts will increase to 530,200 m3 in the year 2007 according to the following table 3.2.

Table 3.2 Estimated Municipal Solid Waste (M.S.W.) for the year 2007

District	MSW in tons/year	Organic waste as % of MSW	Organic waste in tons/year
Nicosia	187,800	22	41,300
Limassol	134,800	25	33,700
Larnaca	81,300	27	22,000
Paphos	62,600	25*	15,600
Famagusta	65,700	25*	15,900
TOTAL	530,200		128,500

* average %

The anual per capita production of solid waste is estimated at 468 kg/year for residential areas and 670 kg/year for tourist areas (including commercial, hotel and restaurants).
Tables showing the composition of MSW in Cyprus, in the year 2007, the estimate of Waste Arisings in Cyprus 1993 according to

District and Waste Producers and the forecast of MSW quantities for Districts for the year 2007, can be found in Appendix 1.

In Cyprus only a few recycling activities are in operation and no separate collection of hazardous wastes from households exist. Very recently collection service of hazardous or toxic wastes from industries was initiated which are taken to a special dumping site.

An effective system of collection and disposal is especially significant with respect to public health and to safequard the natural environment from any adverse effects throughout Cyprus and especially in rural areas from where the islands potable water is provided.
Also significant is the adverse effect which environmental degradation could have on tourism one of Cyprus major industries.
In General solid wastes are disposed in five sanitary landfills one in each district. The municipalities operate the landfills and they run and maintain them. In fact, 75%-78% of population of Cyprus is served by these landfills.
A few villages occasionally burn their solid wastes a practice which is considered illegal in Cyprus. Current recycling activities in Cyprus for solid wastes are few.
However the following recycling facilities for processing recyclables exist and is encouraged to expand.

(a) Recycling of aluminium cans (5% of total quantity)
(b) Recycling of paper (10% of total quantity)
(c) Recycling of glass (very limited)
(d) Recycling of plastics (very limited)
(e) Recycling of tyres (very limited by the cold process retreading).

3.6.5 Objectives

To reach sustainability in the waste management for Cyprus, the following general objectives should be attained to:

- Conservation of natural resources and reduction of the environmentally damaging effects of waste handling and management.
- Promote recycling and waste minimization to reduce waste quantities which are to be handled and treated in the waste management system.
- Improvement of cost affectiveness and better utilization of resources (human, technical, fiscal) which are employed in the management of solid waste.

3.6.6 Action for Consideration

Currently, Cyprus has no general law on waste management, but only some general principles. Within the next few years it is considered imperative to develop and enforce a comprehensive

waste management law in order to exercise close control over the processes of collection, transportation, treatment and disposal of municipal and industrial wastes.
Incentives for increased recycling based on source separation and better waste management should be implemented.
Pilot programmes should be considered and initiated in order to gain experience in the waste management field and verify data e.g incinerators, biogas plants, compositing etc., as well as market prices for recyclables.
Educate and raise awareness of the Public towards recycling.
Increasing the level of collection service especially in rural areas, groups of villages will be encouraged to consider common landfills with their neighboring villages.
The ultimate objective of solid waste collection and disposal in Cyprus is the conservation of natural resources and reduction of the environmentally demaging effects of waste handling and management by promoting recycling and waste minimization and creating a market (outside Cyprus) for recycled materials, products and commodities manufactured partly or entirely on the basis of recycled materials.

3.7 URBAN WATER SUPPLY

Cyprus has always been confronted with the problem of inadequate water for it's domestic needs. This is due to it's semi-arid climate, the average annual rainfall been about 500 mm., and it's traditional inclination towards agriculture whilst the booming tourism industry is pressing for more water. Water supply treatment plants are now completed and serve most of the towns but still some domestic supply schemes continue to operate on the basis of groundwater extraction. All sources of water supplied for domestic use are regularly monitored for the chemical and bacteriological characteristics of water, WHO and American Public Health Association (APHA) quidelines and EU Directives being used.

In Cyprus 99% of the towns and villages have house to house connections. The towns of Nicosia, Limassol, Larnaca and Paphos enjoyed unrestricted water supply since 1993.
Appendix 2 gives some useful statistical data on the water supply of Nicosia town, over the last twenty two years.

Some weaknesses of the water supply system especially in Paphos town, with regard to the limited capacities of the service reservoirs and of the main conveyor to the town are expected to be overcomed in the next few years.

3.8 NATURAL AND MANMADE DISASTERS

The main natural hazards that are affecting Cyprus are earthquakes and landslides. Manmade hazards, such as chemical and

toxic factories, refineries etc. can also create considerable human and material losses and damages.

The impact of a disaster increases enormously when these phenomena strike human settlements or areas of agricultural and natural value. Both natural and manmade disasters cause not only loss of life, but also hinder development through disruption of economic activities and environmental damage.
Mitigation of disasters and environmental vulnerability is a prerequisite of sustainable development.

3.8.1 Earthquakes

Cyprus is situated on the major earthquake zone of the Mediterranean, where most countries are regularly affected by the earthquakes consequences. In the past Cyprus was affected by many earthquakes. Historical records indicate that from 1500 BC to 1900 AD at least 19 earthquakes caused severe damage or destroyed ancient cities situated mainly along the coastal area of the southern, southwestern and southeastern part of Cyprus. During the present century Cyprus was affected by 26 earthquakes with magnitude greater than 4,7 on the Richter scale. The latest destructive earthquake occured on 23rd February 1995, which caused damage in the northwestern part of Cyprus. The earthquake affected more than 70 villages in the Paphos District, many houses were destroyed and 2 people lost their life as a result.

In order to mitigate earthquake consequences and protect human life and the works of man from the destructive effects of earthquakes, an extensive research in the field of seismology is carried out by the Geological Survey Department.
This seismological research mainly concerns the earthquake hazard assessment of particular sites and the assessment of vulnerability. All research is aimed at determining the expected probabilistic accelerations, velocities and displacements caused by earthquakes and appropriate seismic hazard coefficients for particular sites and zones. The output of this research helped in the preparation of seismic zonation maps such as the zoning map of maximum expected ground acceleration, the maximum intensity map, the seismic energy released map and the historical earthquakes map. Cyprus is divided into five seismic zones with different seismic force coefficients.

Currently relevant seismic data are obtained through the operation of the Cyprus Seismological Station at Mathiatis which started in 1984. The present seismic network is an analogue system which consists of one central station and two sub-stations.

In Cyprus most of the structures that suffered extreme damage, temples buildings and monuments were constructed of dressed stone and marble columns and therefore they are unable to respond to

earthquake shaking. Since the independence of Cyprus in 1960 reinforced concrete structures are replacing at a fast rate the old masonry structures of high vulnerability. Today most of the structures are reinforced concrete structures and are built with antiseismic design. The first antiseismic measures known as "Brief Measures for the Earthquake Resistant Design" were introduced in 1986 and the "Cyprus Seismic Code for Reinforced Concrete Structures" was implemented in 1994.

The high seismicity of Cyprus together with its small size and the fact that most development takes place within these hazardous areas, increase enormously the seismic risk. Seismic risk is a significant element which has to be taken into account in land-use planning as an integral part of national development policies. In Cyprus, unfortunately, no considerable protective measures against earthquakes, except the Earthquake Regulations mentioned above, were introduced in physical and land-use planning.

3.8.2 Action for Consideration

During the next few years, great emphasis will be given to the preparation of detailed seismotectonic, earthquake hazard and micro-seismic zoning maps. The completion of these maps will be incorporated in the earthquake hazard assessment which in turn will help towards the evaluation of the seismic risk. Such evaluation should lead to a revision of urban and regional plans as well as to procedures to limit seismic effects.
The upgrading and computerisation of the existing seismic network in order to increase its capabilities, is essential.

Programmes to inform the public on earthquake risk will be prepared with the participation of the Government, local authorities and the mass media which will include scenarios and disaster simulation.

The Government should prepare an emergency plan of action for effective earthquake response including rescue, relief, shelter, evacuation, demolition and rehabilitation.

3.8.3 Landslides

Large parts of the Paphos region exhibit major engineering problems which are associated primarily with the cohesive soil formations. These areas are prone to landslides. In the past, successive shallow or large scale landslides repeatedly ruined many old villages in the Paphos region, and to a lesser extent in some areas of the Limassol region. Recently many old villages in the Paphos region prone to landslides have been resited to areas of more stable foundation conditions. Landslides affected not only villages, but also extensive tracts of agricultural land which, due to the slope movements, was rendered unsuitable for any permanent cultivation. In 1953 a strong earthquake hit the

southwestern part of Cyprus and triggered large scale landslides in the Paphos region.

Since landslides are related mainly to the behaviour of cohesive soils, for engineering and planning purposes, it is essential that these soils be identified in order to predict their anticipated behaviour and to ensure that any potential geological hazards are recognized prior to local or regional development.

3.9 STRATEGIES AND POLICIES

It is not expected that everything wil be done overnight. But Cyprus strongly believes that it has the knowhow, the experience and the technology to secure sustainable development within the coming years. The task environment factors shaping policies in the 1990 are mostly positive, as evidenced by the government's strong environmental agenda, the fact that all political parties publicly support measures for the conservation of the environment, the high pluralism of the political and decision-making system, the activities of local councils which are now elected, representative and accountable, the active intervention of a large number of non-governmental organizations, gradual changes in peoples' values and priorities, the growing recognition that sustainability of tourism and of irrigated agriculture heavily relies on the quality of the environment, etc.

Various negative aspects are still present, such as the prevalence of short-term perspectives and neglect of the longer-term view, economic self-interest and high individualism land relationship/ownership patterns, diffused variety of conflicting interests and shortage of consensus, in the public-at-large, regarding the qualities of the preferred environment. Yet, these aspects can be addressed through strong political will and commitment and will eventually be overpowered by the overall trends favoring more environmentally sensitive policies, which are the following:

(a) The Environmental Framework Law will be finalized. This proposed Law, include, among other principles, environmental compensation schemes, civil liability, compensation for damage to certain wild plants and animals, implementation of polluter-pays principle and emergency powers to take immediate action or ask for an injunction to stop activities detrimental to the environment.

(b) Set minimum standards and encourage treated waste water re-use in order to reduce clean water consumption for irrigation.

(c) In order to avoid pollution of the sea, land and subsurface waters, central sewerage systems should be installed not only in urban but also in rural areas and the operation of such systems should be under control of a Central National body or Organisation.

(d) Incentives for increased recycling based on source separation and better waste management will be implemented.

Pilot programmes will be considered and initiated in order to gain experience in the waste management field and verify data e.g. incinerators, biogas plants, composting etc., as well as market prices for recyclables.

(e) Within the next few years Urban and Regional Plans will be reviewed following the preparation of earthquake hazard and micro-seismic zoning maps, providing information as to procedures to limit seismic effects.

The turning point will be, of course, the just and viable solution to the Cyprus problem and the unification of the island which will terminate the current artificial division of its ecosystem and will allow for a unified environmental policy for the whole Country to be implemented.

PART D

4.0 HOUSING ACCOMMODATION

4.1 INTRODUCTION

The phenomenon of homelessness, which is known to exist in most countries of the world, both developed and developing, is completely unknown in Cyprus. Slum housing, squatting and overcrowded conditions do not exist and according to the 1992 Census of Housing, which covered widely the living conditions of the population, not a single family or person was without a permanent roof i.e. living in the open and moving from place to place.

For the ordinary family in Cyprus housing is an important aspect of life. Beyond its significance as a shelter for the family, it is looked upon as a symbol of social status and economic prosperity, with far reaching consequences for the sector in general, and the families in particular, who under social and other pressures undertake housing investments beyond their economic means. These aspects of housing are dealt with and explained in subsequent parts of this report.

4.2 CONDITION OF THE HOUSING STOCK

Housing in Cyprus is very satisfactory both in terms of quantity as well as quality. The majority of the people are owner-occupiers while a fair percentage of them are owners of more than one unit.

The housing stock in 1992 numbered 233.210 units, the overwhelming majority, of which i.e. 231.930 or 99,5%, were conventional dwellings, to serve a total population of 602.025, or 185.459 households. There are 385,27 dwellings per 1000 people or 1,25 dwellings per household.

The increase in the housing stock between 1976 and 1992 is given in table 4.1 below:

Table 4.1 - Total Housing Stock

Year	Housing Units*
1976	119.296
1982	168.588
1992	231.930

* Free parts of Cyprus only

During the intercensal period 1982-1992 the stock of dwellings increased by 63.342 units or 37,6%. In the same period the population increased by 17,6% indicating a substantial quantitative improvement of housing conditions in Cyprus.

The average number of persons per room is given in table 4.2 below:

Table 4.2 - No of persons per room

Year	Average for Total Population	Urban Areas	Rural Areas
1976	1,52	1,40	1,64
1982	0,78	0,76	0,82
1992	0,64	0,62	0,68

The average number of rooms per occupied dwelling is given in table 4.3 below:

Table 4.3 - Size of occupied dwellings in terms of no. of rooms

Year	All Areas	Urban Areas	Rural Areas
1960	3,2	4,1	2,8
1971	4,3	4,7	4,1
1976	2,8	3,2	2,5
1982	4,6	4,8	4,2
1992	5,11	5,25	4,81

The above figures indicate the improvement which took place in the period 1960-1974, that is, between the independence of Cyprus (1960) and the Turkish invasion of Cyprus (1974) which meant the displacement of no less than 1/3 of the population from their legitimate homes, and which accounts for the deterioration shown between 1974 and 1976. Conversely, the period between 1976 and 1992 shows an ever-lasting improvement mainly attributable to the priority the people of Cyprus attach to housing and rises in incomes which made positive attitudes towards housing possible.

The number of occupied conventional dwellings by type of building in Urban and Rural areas for 1982 and 1992 is given in table 4.4 below:

Table 4.4 - Number of occupied dwellings by type, Urban/Rural, 1982, 1992*

Type of building	All Areas		Urban Areas		Rural Areas	
	1982	1992	1982	1992	1982	1992
Single house	68.170	85.635	30.659	40.563	37.511	45.072
Semi-detached	19.370	31.619	15.902	27.132	3.468	4.487
Row houses	23.444	19.392	13.988	12.747	9.456	6.645
Back-yard house	8.968	8.148	7.629	6.535	1.339	1.613
Apartment blocks	11.402	25.258	11.204	24.259	198	999
Partly residential	10.435	13.362	9.378	12.826	1.067	536
Other type	7	41	4	35	3	6
Not stated	114	288	85	215	29	73
TOTAL	141.910	183.743	88.849	124.312	53.061	59.431

* Free parts of Cyprus only

The prevalent type of occupied buildings is the single detached house accounting for 46,60% of the total in 1992. This is the type of dwelling most preferred by families especially with children of schooling age. Apartment blocks accounted for 13,8% of the total, in 1992. Between 1982 and 1992 apartment blocks increased by 122% the highest percentage increase, reflecting the tendency to build blocks of flats where land values are very high. Back-yard house occupancy dropped from 6,3% to 4,4% of the total between 1982 and 1992 indicating lower demand for this unsatisfactory type of dwelling.

The distribution of occupied conventional dwellings by availability of selected facilities for the period 1976-1992, urban/rural, is given in table 4.5 below:

Table 4.5 - Selected facilities, Urban/Rural (%)

Facility	Urban Areas			Rural Areas		
	1976	1982	1992	1976	1982	1992
Kitchen	92	98	98	74	92	94
Bath/Shower	73	87	98	30	58	80
Toilet facilities	N.A.	95	98	N.A	68	80
Piped Water	93	99	99	67	98	99
Electricity	97	99	99	87	96	98

These figures are indicative of the improvement made both in urban and rural areas over the period 1976 to 1992, although there are differences in favour of urban areas explained by income differences and the fact that the housing stock in rural areas is older.

The distribution of occupied conventional dwellings by availability of basic facilities for 1982 and 1992 is given in table 4.6 below:

Table 4.6 - Basic Facilities, 1982, 1992 (%)

Facility	1982	1992
Kitchen		
Separate room	82,8	92,3
Kitchenette	6,4	4,3
Outside the house	7,1	2,2
No Kitchen	3,7	1,0
Bath/shower		
Inside the house	73,5	90,8
Outside the house	4,4	4,0
No bath/shower	21,9	5,1
Flush Toilet		
Inside the house	73,5	91,3
Outside the house	10,3	6,4
No flush toilet	14,3	2,2
Piped Water		
Cold and hot Water inside the house	71,5	90,3
Only cold water outside the house	22,5	5,2
Piped water outside the house	5,3	3,7
No facilities of piped water	0,3	0,7
Type of Heating		
Central heating	3,3	12,1
Storage heater	0,8	2,2
Stoves (gas/Kerosene)	70,9	67,8
No heating available	1,3	2,4

Of the 184.808 occupied housing units in 1992 only 0,8% had no facility for the provision of water. Conversely 99,2% had at least piped water outside the house and the majority of them were connected to public supply. Flush toilet is also routinely provided and no less than 180.560 houses out of a total of 184.808 occupied dwellings are reported as having this facility, the majority of them inside the house (91,3%).

Fixed bath or shower is available to 94,8% of the housing units. The overwhelming majority, 98,8% of the occupied houses were reported as having separate kitchen facilities and only 1,0% had no kitchen facility.

The distribution of households by type of tenure for 1982 and 1992 is given in table 4.7 below:

Table 4.7 - Tenure Status of Household (%)

Type of tenure	1982	1992
Owner-occupied	60,0	63,8
Rented	16,5	12,9
Rent-free	5,3	6,7
Refugee housing estate	15,7	13,1
Other arrangements	2,1	3,1

In 1992 households in owner-occupied dwellings were 118.381 or 63,8% and 23.980 or 12,9% in rented accommodation. Rent free dwellings were held by 12.439 households or 6,7%, and 13,1% or 24.311 were living in public housing for the displaced. The remaining 5.811 or 3,1% of households are holding accommodation by some other arrangement (Turkish-Cypriot houses, intitutions, etc.).

On the basis of this evidence 83,6% of households do not pay rent and have solved their housing problem either by owner-occupier or holding rent-free dwellings, and only 12,9% occupy rented accommodation.

The number of occupied dwellings for 1982 and 1992 by number of rooms is given in table 4.8 below:

Table 4.8 - Occupied dwellings by no. of rooms

No. of rooms	No. of Dwellings	
	1982	1992
1	4.055	1.520
2	10.309	7.713
3	17.528	15.267
4	33.920	32.318
5	41.940	49.319
6	27.976	52.950
7	5.912	17.302
8+	2.441	7.102
Not stated	229	252
	144.310	183.743

During the period of 1982-1992 the number of occupied dwellings increased by 39.433 or 27,32%, from 144.310 to 183.743 units. There are now more houses with 5 rooms and over, and fewer with less than 4 rooms indicating that new dwellings adding to the housing stock are bigger in size.

Occupied dwellings by period of construction is given in table 4.9 below:

Table 4.9 - Number of occupied dwellings by period of construction

Period of construction	No. of dwelling	%
Before 1950	23.769	12,93
1950-1959	11.162	6,23
1960-1969	20.189	10,90
1970-1979	45.147	24,78
1980-1989	66.653	35,99
1990-1992	15.204	8,30
Not stated	1.619	0,87
	183.743	100,00

No less than 68% of the total occupied stock was built in the post-1970 period indicating that most of the dwellings are of fairly recent construction and only 18,86% of the stock was built before 1960 causing concern about its maintenance and modernization.

4.3 RECENT TRENDS AND DEVELOPMENTS IN THE HOUSING SECTOR

4.3.1 Supply of Housing

The number of houses completed between 1985 and 1992 by private and public sector are given in table 4.10 below:

Table 4.10 - Dwellings Completed by Private and Public Sector, 1985 - 1992

	Public Sector	Private Sector	TOTAL
1985	717	6.758	7.475
1986	534	6.500	7.034
1987	547	6.092	6.639
1988	547	6.821	7.368
1989	466	7.344	7.810
1990	286	7.835	8.121
1991	197	7.561	7.758
1992	364	7.484	7.848
1993	171	7.665	7.836
TOTAL	3.829	64.060	67.889
Number of rooms (total)	16.071	326.613	342.684

Of the total of 67.889 dwellings completed between 1985 and 1993 64.060 or 94,36% were completed by the private sector and 3.829 or 5,64% by the public sector. The public sector's contribution was exclusively meant to satisfy refugee housing needs. Some of the houses completed by the private sector contain an element of public subsidy for which an account is given later.

The average number of rooms per dwelling was 5,1 for housing provided by the private sector and 4,2 by the public sector. The average construction of dwellings per year is 7.543 units corresponding to 12,4 dwellings per 1.000 people. In countries with serious shortages of housing the U.N. target is 10 units per thousand people.

The number of completed dwellings in 1993 by the private and public sectors in urban and rural areas and by size is given in table 4.11 below:

Table 4.11 - Completed units by Sector in Urban and Rural areas in 1993

	Private Sector		Public Sector		Total	
	No.of Units	Area (m^2)	No. of Units	Area (m^2)	No. of Units	Area (m^2)
Urban	5.017	175	76	109	5.093	174
Rural	2.648	154	95	121	2.743	152

The urban/rural split of housing in 1993 was 5.093 in urban areas or 8 houses per 1000 people and 2.746 in rural areas or 14,1 houses per 1000 people.

The number of houses and apartments completed in 1993 by the private sector by average number of rooms, and area per house, in urban and rural areas is given in table 4.12 below:

Table 4.12 - Dwellings completed by the Private Sector, no. of rooms, and average area, in Urban and Rural areas in 1993

	Houses	Apartments
Urban		
Number of Units	3.139	1.878
Average number of rooms	6,3	4,0
Area(m^2)	213	111
Rural		
Number of Units	2.058	590
Average number of rooms	5,4	3,4
Area(m^2)	176	73

Apartments in urban areas account for 33,43% of the total number of dwellings completed. This is a fairly new development and reflects the fact that high land values in residential areas dictate solutions which do not necessarily correspond to the housing preferences of households.

The size of houses built in urban areas both in terms of number of rooms (6,3) and area (213 m^2) is a cause of concern since they are bigger than the average household size (3,4) could reasonably justify.

4.3.2 Other Aspects of the Housing Sector

The housing sector represents about 50% of the construction industry, reflecting its significance both in terms of investment, and income in the economy of the island. The output of the construction industry as well as of the housing sector is given in table 4.13 below:

Table 4.13 - Gross Output of the Construction Industry New Construction and Repairs in housing at current prices Cfmln

	1985	1990	1991	1992	1993
Construction Industry (Gross output)	286,6	466,1	515,5	570,8	581,6
Housing Sector					
New Construction	143,3	218,7	246,4	254,7	267,8
Repairs	9,7	21,0	23,9	26,3	31,6
Gross Output	155,0	239,7	270,3	281,7	299,4
Percentage of Gross Housing Investments to Gross Construction Output	54%	51,4%	52,43%	49,35%	51,48%

Housing accounts for about 50% of the construction industry's output. The emphasis in Cyprus was always on new housing construction, to the neglect of repairs and modernization which could prolong the economic life of the housing stock. In 1985 only 6.2% of total expenditure for housing was spent for repairs. In the years before 1985 maintenance expenditure might have been even smaller. However, in 1990 the percentage of repairs to total expenditure for housing rose to 8,7% and by 1993 to 10,55%, reflecting the sector's more reasonable concern about proper maintenance and modernization of the housing stock. Housing conservation programmes positively affected this trend too.

4.3.3 Affordability

The kind of housing a family could afford to purchase depends on many factors such as the income of the

family, land prices, cost of construction, housing prices, availability and terms of housing loans, housing policy and many other factors. A rather crude indicator of affordability can be expressed by the ratio of dwelling cost/price to household income. The various components which affect the household housing purchasing capacity are examined below:

(a) Income

In 1985 the gross national product per capita stood at C£2.787 and by 1993 rose to C£5.262 at current market prices, i.e. an increase of 88,8% took place. The corresponding increase at constant prices was 34,91%. Gross Household (3,34 persons) income in 1993 at current prices was C£17.575.

The percentage distribution of annual gross household income in urban and rural areas 1990/1991 is given in table 4.14 below:

Table 4.14 - Distribution of household income in Urban and Rural areas, 1990/91 (%)

Annual Gross Income (£)	Urban	Rural	Total
Below 3.999	13,80	25,04	17,49
4.000-9.999	34,80	39,09	36,21
10.000-14.999	24,50	22,28	23,77
15.000-20.999	14,70	10,06	13,18
21.000 and over	12,20	3,52	9,35

Source: Household Income and Expenditure Survey 1990/91

The average household gross income in 1990/91 stood at C£11.000. These figures indicate clearly that there are income differentials in favour of urban areas, but more pronounced are differences between income groups. In particular, in urban areas the lowest group (13,8% of households) earned less than C£4.000 per annum while the highest (12,2%) earned more than C£21.000 p.a.

(b) Land Prices

There are no official statistics about land prices and how they change over time. It is, however, generally accepted that they are high and rise at a

faster rate than the general rate of inflation, exercising pressures to households interested to buy a building site for the construction of their house.

In 1992 a building site in Nicosia, the capital of Cyprus, could command prices between C£20.000 and C£40.000 and similar prices prevail in other urban areas too. In peri-urban villages prices do not differ significantly from those in the towns while in remote villages they are lower but incomes are also lower and availability of building sites, especially in mountainous regions, is an added problem.

(c) Cost of housing Construction

The cost of housing construction per square metre and the cost of building a house and an apartment in 1993 is given in table 4.15 below:

Table 4.15 - Cost of Construction for houses and apartments in Urban and Rural areas - 1993

	Urban (C£)	Rural (C£)	Total (C£)
House construction cost per m²	245	240	243
Average cost of construction per house	52.218	42.161	48.236
Apartment construction cost per m²	222	225	223
Average cost of construction per flat	24.658	16.485	22.704

There are no market differences in the cost of construction per sq. m. between urban and rural areas. The average cost of construction per house and apartment is different, however, between urban and rural areas reflecting differences in size. The general price index of construction in the period between 1985 and 1993 rose by 50%, that of labour by 84% and materials by 29%.

(d) Apartment and Housing Prices. (1993)

House prices vary significantly depending on the area of the house, its location and the quality of construction. An average house in an urban area built in a normal size plot (520 m²) may cost as much as C£85.000, but there are variations relating to size and luxury provided. In this respect houses of up to C£200.000 or more are not extremes but are seen all over Cyprus, manifesting the social factors which influence housing decisions and reflecting the waste of resources in the sector.

Apartment prices likewise do differ with size, location and quality of construction. An average size 3-bedroom apartment of 100 m² in an urban area may fetch as much as C£40.000 to £C45.000. Luxury flats of up to 150 m² may command prices between C£70.000 and C£80.000.

(e) Ratios of housing prices to household income

A detached single family dwelling built in the middle of a normal size building plot (520m²) is the dream of every household in Cyprus. This type of housing is usually built on an individual basis. The average cost, including land and other expenses is bout C£85.000.

The relation between the cost of building such a house and gross household national product is about 5 (C£85.000: C£17.575). This ratio is a little on the upper side, indicating that even middle income earners are in difficulty to buy an average house.

Ideally this ratio in Cyprus should have been 4, implying that 25% of the housing cost should be the contribution of the household from past savings, and the remainder financed with a mortgage loan. However, most of the sources extending loans for housing are conservative and do not cover more than 50% of the housing cost.

Utilizing the income distribution given in table 13 it may be seen that only 9,35% of all households in Cyprus afford the house of their liking (single detached dwelling). In urban areas this percentage is 12,2% and in rural area as little as 3,52%.

A fairly recent alternative is apartment accommodation which in 1992 was available for C£40.000. The

relation between the cost of an apartment to gross household income is about 4 to 1 which is a reasonable ratio. However, for families earning C£7.000 this ratio is 5 to 1 indicating that 25% of households with earnings less than C£7.000 p.a. are in difficulty to even buy an average flat.

The situation in fact is even worse because the majority of the Cypriots under the influence of social pressures do build houses which are far beyond their economic means.

Despite these uncomfortable relations a fair percentage of the population are owner-occupiers and surprisingly of single detached family dwellings. The answer to this paradox is to be found in the willingness of the Cypriots to make sacrifices for the construction of their houses, assistance from family especially towards newly married couples, disposal of other immovable property, housing subsidies especially for refugees, etc.

(f) Availability of housing loans

In Cyprus, with the exception of the Housing Finance Corporation and few co-operative societies which operate like building societies extending housing loans to their members, there are no institutions specializing in housing finance.

The sources of housing loans in 1991 are given in table 4.16 below:

Table 4.16 - Outstanding loans for housing in 1991

Source of lending	C£mlns	%
Co-operative Societies	538	78,7
Commercial Banks	100	14,6
Housing Finance Corporation	37	5,4
Insurance Companies	9	1,3
TOTAL	684	100,0

Co-operative societies and Commercial Banks are the main sources of housing finance. They extend loans of short-term duration and at the market interest rate. The total housing loans in 1991 was estimated at nearly C£700 mlns or about 25% of G.D.P.

High monthly repayments as well as the fact that these lending institutions do not finance more than 50% of the cost of housing put a strain on the income of families either because of repayment requirements or because the family is saving to make up the necessary downpayment. Either way a considerable part of household income for a long period of time is spent for housing to the neglect of other, equally important, aspects and needs of life.

In 1990/91 the average annual household repayment of loan was C£1.068, of which over half, 52% or C£552, was for housing purposes. But there are variations. For example, a family earning C£10.000 p.a. will have to pay C£500 per month in order to serve a loan of C£30.000. About 60% of the household income is spent for repayments, and this is not an extreme but rather the norm faced by especially newly married couples.

(g) Rents

Changes in rent, construction cost and general price index are given in table 4.17 below:

Table 4.17 - Changes in rents, construction costs and general price index (1985-100).

	1976	1985	1991	1993
Rent	63,52	100	129,52	145,29
Cost of housing Construction	38,81	100	132,40	147,38
Retail price index	51,02	100	122,57	n.a.

Between 1976 and 1991 rents rose by 104%, housing construction costs by 241% and the general price index by 140%. Obviously rents rose less than construction costs and the retail price index. For most of this period there was no strict rent control and there was satisfactory supply of houses by both the private as well as the public sector.

Rent and housing accounted for 11,41% and 13,63% of household expenditure in 1984/85 and 1990/91 respectively.

The percentage of households paying rent and the monthly rent paid in urban and rural areas in 1990/91 and 1984/85 is given in table 4.18 below:

Table 4.18 - Households paying rent and monthly rent paid, Urban/Rural, in 1990/91 and 1984/85.

	1984/1985		1990/1991	
	% of households in rented accommodation	Monthly rent C£	% of households in rented accommodation	Monthly rent C£
Urban	19,0	48	16,9	85
Rural	3,1	22	3,2	55
Total	13,1	45	12,3	82

There are more households on rent in urban than in rural areas where rents are also lower.

4.4 HOUSING POLICY 1974 - 1994

In the period before 1974 housing was strictly a private matter and the Government had little direct or indirect involvement in the provision of housing. The sector was left to operate along the tenents of free uninhibited market forces and its performance, generally speaking, was more than satisfactory.

There was, however, some legitimate concern over its allocative efficiency and ability to provide adequate and decent housing for low-income households. This problem had eventually led to the establishment of the Cyprus Land Development Corporation and the Housing Finance Corporation whose primary concern is to help families of low incomes to solve their housing problem.

The reign of free market forces came to a halt in 1974 when Turkey invaded Cyprus and displaced one third of the population from their houses and jobs and deprived them from their legitimate property. Displaced population was left homeless at the mercy of Government assistance.

Soon after the Turkish invasion various housing programmes were introduced by the Government all for the benefit of refugees. In fact up until 1984 direct provision of housing by Government was an important part of the total supply of housing. Gradually direct involvement in the market by the Government is

decreasing but even today there are generous housing progammes operating in favour of displaced population.

A fairly recent development in housing policy is the introduction by the Government of certain housing programmes providing low-interest, long-term loans to special groups of people either on the basis of the size of their family or place of origin. Regrettably these policies do not extend assistance on the basis of income and irrespective of place of origin and therefore they fall short of the needs of low-income people.

Housing Policy Today

The emphasis of the Government housing policy today is on the displaced population. Most of the existing and most generous housing programmes are mainly concerned with the housing accommodation of refugees. There are, however, programmes which extend asistance to newly married couples in certain areas, to multi-children families, rent subsidy schemes repair and extension of houses, division of land for poor people in rural areas etc. Special mention should also be made to the Cyprus Land Development Corporation and Housing Finance Corporation whose activities cover the whole of Cyprus.

Despite all these Government housing programmes, the details of which will be given later in this section, the main source of housing finance and investments in the field remains the private sector accounting for 97,8% of total housing supply in 1993.

The most basic and acute problem in the sector is the lack of a unified and comprehensive housing policy which could clearly show its aims and objectives. Most of the housing programmes, were formulated and introduced to address specific needs or broader policy endeavours and do not fall or adhere to any comprehensive framework. Eligibility is sometimes accorded on the basis of origin, place of residence, size of family, etc., lacking common criterion and objectives.

4.4.1 GOVERNMENT HOUSING PROGRAMMES/POLICIES

One of the many direct results of the 1974 Turkish invasion and the continuing military occupation of about 37% of the island's territory, is that 45.000

families were evicted from their native lands and settlements and suddenly became homeless. In the face of this grave situation, the Government of Cyprus has since put every possible effort to accommodate displaced families under temporary, albeit acceptable living conditions.

Most of these families have been provided with temporary shelter in expectation of their eventual return to their towns and villages of origin, which are still under military occupation, in violation of International Law and basic Human Rights.

In order to promote the objective of improving housing conditions for displaced families, the Government adopted the following programmes.

(a) Low-Cost Housing Programme, mainly in urban areas, which provides for the construction of houses in comprehensively designed housing estates, suitable for the temporary accommodation of the displaced families and for future use as housing estates for low income families. Under this programme, between 1975-1995 about 14.000 housing units have been completed by the Government.

(b) Self-Help Housing Programme on Government Land, mainly in periurban and rural areas, provides serviced building plots in approved areas as well as a grant-in-aid to displaced families for the purchase of building materials for the construction of their own house, according to the architectural plans provided by the Government. Under this programme, 12.000 units were completed during 1975-1995.

(c) Self-Help Housing Programme on Private Land, mainly in urban areas, for the displaced families who own a building plot and want to build their own house by themselves. The Government provides a grant-in-aid for the purchase of building materials only. Under this programme, between 1975-1995 about 19.500 houses were completed by displaced families.

(d) Purchase of a House or Apartment Programme, mainly in urban areas, which provides for grants-in-aid and loans to displaced families who wish to buy a house or an apartment from the private sector, provided they meet established criteria.

(e) Repair and Rehabilitation of Old or Abandoned Turkish Houses Programme, in urban and rural areas. Under

this scheme, Government undertakes the repair and maintenance of existing old Turkish Cypriot houses and after they have been improved to acceptable standards in terms of structural fitness and amenities, are handed over to refugee families for temporary accommodation until the return of their legal owners. Between the years 1975 - 1995, about 5.500 houses were provided to an equal number of displaced families through this programme.

(f) Rebuilding and Rehabilitation Programme, in central cores of the towns. Under this programme the Government undertakes to renovate and rehabilitate small areas in central parts of towns which are in a very bad state, by the restoration of worthwhile existing buildings and inserting into the empty sites new houses which would be in harmony with the existing structure and character of the old town. Through this programme the area is rehabilitated and revitalized and people in urgent need of housing are accommodated under proper housing conditions.

Great efforts have been made during the last 20 years towards the accommodation of displaced families under proper housing conditions and about 58.000 such families have been provided with shelter or assisted to acquire a new house, at a total cost of £C254.000.000 or U.S.D. 560.000.000, approximately.

To finance the various schemes for the relief of the displaced, the Cyprus Government has set up the Special Relief Fund, which draws revenue from special taxation and from foreign contributions (15% through the United Nations).

Housing expenditure represents about 70% of the total amount spent for the displaced through the Special Relief Fund.

The Government has also established the Cyprus Land Development Corporation and the Housing Finance Corporation in order to help families of moderate and low incomes to purchase a house. The primary objectives and programmes of these Corporations are described in subsequent parts of this report.

The Government of the Republic of Cyprus launched another housing scheme recently covering rural communities which are mainly in the mountain areas. This scheme provides low interest loans for the erection/completion or house purchase. Also in the same

way provides loans for the improvement/extensions of residences.

Government efforts to improve the housing conditions of families with very low income continue and a new housing policy is under study for the years 1996 - 2000.

A main policy objective of the Cyprus Government is that every family should have the opportunity to live in decent housing conditions and the efforts will continue in future in order to improve further the quality of life of the population in general and of those in greater need in particular.

4.4.2 CYPRUS LAND DEVELOPMENT CORPORATION (C.L.D.C.)

The Cyprus Land Development Corporation was established by the Government of the Republic of Cyprus in 1980 and started operations in 1983. Its establishment is associated with the realization that free market forces and the private sector could not provide decent and adequate housing to low and middle-income families.

At the time when the CLDC was established and indeed today there is evidence which suggests that the private sector is failing to address the special housing needs of the people earning average and especially low income. Dwelling and building site prices are beyond the economic reach of these people. The two most important objectives of the CLDC are:

To help families of low and middle-income to acquire home-ownership, and

To moderate the increase and/or stabilize prices in the housing and land market.

In order to accomplish these objectives the CLDC purchases land from Government or the private sector which after it has been developed by the CLDC in either building sites or comprehensive housing estates is disposed of to eligible families.

4.4.2.1 PROGRAMMES OPERATED BY THE CLDC

(a) Construction of Comprehensive housing estates/ multi-storey blocks of flats.

For the provision of housing to low and moderate income families the CLDC undertakes the construction of comprehensive housing estates. They involve the construction of houses varying in type and size such as one and two storey semi-detached and terrace houses, and when land zones permit it, multi-storey blocks of flats. Sizes are in the range of 100 to 140 sq. meters and every effort is taken to make sure that the houses built are within the economic reach of families earning less than C£12.000 p.a. Current prices are between C£26.000 and C£50.000 depending on size and type of dwelling.

Recently the CLDC has decided to have more active involvement in the provision of flats and there are now under construction several multi storey buildings in Nicosia and Larnaca. The scheme affords certain advantages which are listed below.

Purchasers pay in advance a maximum of 25% of the prize and the remainder is paid off when the house is handed over or when the property is titled to their names. Purchasers, if they so wish, are helped to secure mortgage loans from the Housing Finance Corporation at terms much more favourable than those extended by Commercial or Co-operative Banks.

The CLDC is a public non-profit-seeking agency and therefore supplies houses/flats at prices which are by at least 20% lower than those of the private sector.

Property sold by the CLDC is not liable to transfer fees which amount to 5-7% of the total price.

(b) Division of land into building sites in Urban areas.

The CLDC purchases land which after it has been developed into building sites is disposed of to low and middle income families. This programme is very popular and attractive to young and newly married couples. The advantages of this programme are:

Prices and terms of disposal compare very favourably to those of the private sector. In particular prices

are lower by at least 20-40%, downpayments do not exceed 20% of the price and the remainder is payable to the CLDC with monthly payments spreading over a period of up to 10 years.

CLDC site projects are developed in residential areas which are in close proximity to commercial and community services.

Purchasers do not pay transfer fees, saving about 5% of the price.

(c) Division of land into building sites in Rural areas.

The CLDC firmly believes that the housing problem is not confined in urban areas but is also found in rural communities. It takes many forms, the most usual and acute being in communities which lack suitable land for residential development.
Land is acquired and after it has been provided with the necessary land services is disposed of to families which do not possess land to build their houses or to young girls of marrying age.

The advantages of the scheme are similar to those in urban areas with the additional benefit that downpayment in rural areas may be as low as 10%, the period of repayment longer than 10 years and an interest subsidy is available.

4.4.2.2 SELECTION OF FAMILIES

The selection of eligible families is made on the basis of social criteria decided by the Board of Directors and approved by the Council of Ministers. They pertain to the income which must not exceed C£12.000 p.a., and the property owned by the family.

4.4.2.3 COMPLETED PROGRAMME

Between 1983 and 1994 the CLDC completed 1501 houses and building sites as follows:

	No of dwellings	%	No of plots	%	Total No of dwellings/ plots	%
Nicosia	505	90,3	145	15,4	650	43,3
Limassol	54	9,7	243	25,8	297	19,8
Larnaca	-		147	15,6	147	9,8
Paphos	-		362	37,4	352	23,4
Rural Areas	-		55	5,8	55	3,7
	559	100,0	942	100,0	1501	100,0

The CLDC housing programme is expanding gradually reaching the target of 500 units per year.

4.4.2.4 PROBLEMS FACED BY THE CLDC

The CLDC as a newly established Corporation is confronted with several problems. The three most important that may be singled out are:

(a) Low capitalisation - The CLDC is operating in a sector which is most demanding in terms of capital. Land purchases and construction works, especially erection of buildings, require capital which regrettably the CLDC does not have and, therefore, draws funds from the money market at market rates.

(b) Land Availability - Land prices in designated residential areas are very high and beyond the economic reach of the middle and low income families. Besides, most of the land available in the market is of relatively restricted areas limiting the possibility of comprehensive housing or site developments.

(c) Housing of families with low income - It is recalled that the CLDC was set up to help families of middle and low income to solve their housing problem. Unfortunately there is evidence suggesting that the problem of people earning less than C£7.000 remains in the main unresolved requiring coordinated action

by the Government, the CLDC and the Housing Finance Corporation. The aim is to make housing affordable to these people by securing the provision of suitable houses at prices within their economic reach. Low deposits and long-term low-interest rate loans are also necessary to render families of less than C£7.000 accessible to the housing market.

4.4.3 HOUSING FINANCE CORPORATION (H.F.C)

The Housing Finance Corporation was established in 1980 by the Enactment of the HFC Law. This Law provides that the loan facilities of HFC should focus on the needs of "persons of moderate or lower means" and gives priority to loan requests from these income groups. These income groups are defined by decision of the Council of Ministers and the Corporation and at present are as follows:

Lower-income group:	up to C£8.000 per annum (gross family income)
Middle-income group:	C£8.001 - C£12.000 per annum (gross family income)
Upper-income group:	over C£12.001 per annum (gross family income)

HFC regulations require that all loans granted should be used for the purchase, construction, extension or repair of the family's first home. Financing building sites sold by the Cyprus Land Development Corporation is also allowed as an exception.

HFC accepts all type of bank deposits-current accounts, savings accounts, notice accounts, term deposits. These constitute the main source of loanable funds. In addition the Corporation operates a Monthly Savings Scheme which offers significant tax advantages to depositors. It also issues five - year bonds which are sold mainly to institutional investors.

The loans granted by HFC can be classified into three categories:

(a) Loans approved by HFC, (b) Loans approved by HFC with Government subsidy and (c) Government loans undertaken by HFC as Trustee of the Government.

(a) Loans approved by HFC

(i) Loans given after a short period of deposits

The most popular loans given by the Housing Finance Corporation are those which require that applicants make a lumpsum deposit for a certain period of time, before submitting an application for a loan. The duration and the amount of the deposit depend upon the family's income. However, prior co-operation with the Corporation is not always a prerequisite for the approval of housing loan. In periods of comfortable liquidity for example the Corporation does not insist on prior deposits by loan applicants. The criteria for priority are:

The gross annual income of both spouses does not exceed C£12.000.

The loan is for the purchase, construction, extension or repair of the family's first home.

The total family's property, including property of children is not adequate to finance the cost of a first home.

The building will be used only for the family's housing needs.

The applicants have the necessary income to repay the loan within the period for which the loan has been awarded.

(ii) Monthly Savings Scheme

Apart from the above type of housing loans, the Corporation also operates a "Monthly Savings Scheme". Depositors save a regular monthly fixed amount for at least four years and after the end of this period they are entitled to submit an application for a loan up to four times their accumulated savings. 40% of the annual savings under this scheme can be deducted from the depositor's taxable income.

The maximum amount of loan under both schemes is C£40.000 and the maximum repayment period 20 years. The rate of interest charged depends upon the family income and the size of the housing unit.

The most important advantages of HFC loans are: small instalments or repayment in relation to the amount of the loan, resulting from the long-term repayment period; the comfortable mortgage requirements - mortgage of the property being financed and the subsidised interest rates on loans to lower and middle income groups. HFC customers are also exempted from mortgage taxes and certain other Government fees.

(b) Loans approved by HFC with a Government subsidy

As part of the general Governent social and housing policy, HFC approves loans to families with special needs such as large families with more than 4 children and families who are willing to live in a listed number of villages, mainly in mountainous areas.

(i) Large Families

Loans awarded to large families can be for the purchase, construction, extension or repair of the family's home. The main criteria for such loans are as follows:

The gross annual income of both spouses should not exceed C£12.000.

Families should have a minimum number of dependant children (4).

The building financed by the loan will be used only for the family's housing needs.

The total value of the family's property is not adequate to finance the cost of a first home.

Applicants must ensure HFC that they can provide the remaining amount for financing the home (exluding the loan).

(ii) Rural areas

This type of loan is awarded to lower income families who are willing to live in a listed number of villages with no tourist attraction and not a favourable road network, mainly in mountain areas. The main criteria are:

The gross annual income of both spouses should not exceed C£9.000.

The cover area of the house should not exceed 200 square meters.

Priority is given to couples who got married within the last ten years.

Priority is given to couples who are already residing in these villages.

The total value of the Family's property is not adequate to finance the cost of the house.

The building financed by the loan will be used only for the family's housing needs.

Applicants must ensure HFC that they can provide the remaining amount for financing the home.

The maximum loan and repayment period under both Schemes differ according to the type of loan.

In both cases the loans are awarded at an interest rate of 5%. The Governemnt subsidises the interest between this rate and the prevailing market rate which at present is 8,5%.

(c) Government loans undertaken by the HFC as Trustee of the Government

The Government grants favourable housing loans to encourage families dwell in the dead zone areas or along Nicosia's dividing line (Green Line). Applications are approved by the District Officers and subsequently transferred to the Housing Finance Corporation for awarding the loans.

(i) Dead Zone areas

District Officers accept applications from couples wishing to reside in designated communities along the Dead Zone, irrespective of their financial status. After their approval, applications are forwarded to HFC for completion of the procedure.

The maximum amount of loan is C£15.000 and the repayment period is 30 years. The interest rate of these loans is 4%. A further 0,75% on the outstanding balance of the loans is paid by the

Government to HFC for the administration of the scheme. The necessary funds for this scheme are provided by the Government.

(ii) Nicosia GreenLine

Favourable loans are awarded to couples willing to reside in the Nicosia Greenline area, where the Government approves loans up to C£18.000 with a supplementary grant of up to C£4.000. The interest rate on these loans is 4% and the repayment period is 20 years.

The Ministry of the Interior transfers the necessary funds for the above schemes to HFC at regular intervals. A further 0,75% on the outstanding amount of the loans, is paid by the Government to HFC as a fee for the administration of the scheme.

All loans granted by HFC are mortgage secured. The amount of a mortgage loan cannot exceed 75% of the total market value of the property financed, except on loans under the Government schemes, where there is no such limitation. In cases where no deeds are available, HFC accepts bank guarantees as a temporary arrangement until the relevant deed is issued.

All the properties financed by HFC are insured to their full value. Insurance covers fire, earthquake, explosion, thunderbolt, storm etc. The head of the family is also insured for the amount of the housing loan.

4.5 PROBLEMS IN THE HOUSING SECTOR

The plurality in the housing policy and the multiplicity of the housing programmes may not in themeselves constitute a serious shortcoming. Different problems and housing needs reasonably require different policy measures and action. However, the fact that all these programmes do not fall into a comprehensive policy framework is a serious weakness for a number of reasons.

First, the fragmentation of resources that current housing policy entails reduces its effectiveness and increases administrative cost.

Second, all these programmes do not accord eligibility on the basis of common criteria, and, therefore, they may and actually do lead to social injustice.

Other problems in the sector are:

(a) Cost of construction and land prices, which together form the cost of housing, are very high causing difficulties to low-and even middle-income earners. During the last decade there were signs of the increasing difficulty for lower -income groups to have access to properly serviced development land in order to satisfy immediate housing needs. The general rise in land and building plot prices, has narrowed available options and people tend to seek for alternvative housing solutions in relatively long distances from urban development areas.

(b) Despite the fairly high percentage of home-ownership in Cyprus, there is evidence indicating that a certain propotion of the population is not in a position to secure decent housing. High downpayment requirement, and equally high monthly instalments necessary to serve housing loans render these people inaccessible to the housing market. Regrettably existing policy either does not cover these people or the policy itself falls short of their needs. The emphasis of housing policy and programmes is on the displaced population which enjoys preferential treatment as opposed to other groups, who although equally deserving they are left helpless.

(c) Few houses, built immediately after the Turkish invasion, when it was thought that the problem would not last for long, are of poor quality and certainly below the standard of housing that has been built during subsequent stages. Replacement of these few estates and rehousing of the people occupying them is an urgent need.

(d) Rural housing especially in remote mountainous areas is generally inferior to urban housing calling for a policy action that should aim at encouraging repairs improvements and modernizations.

(e) In the process of urbanisation, which lasted for most of the period between 1940 and 1960, a fair percentage of rural housing was deserted. As they remained empty, neglected and poorly maintained these houses are gradually falling into desrepair. With the

assistance of an appropriate policy this part of the stock could be brought back to use and form a valuable resource of our society and heritage. In this category also falls part of the housing stock which was built before 1950 causing concern over its proper repair maintenance and modernization.

(f) Urban quarters and villages which lay along the cease fire line, the so called Buffer Zone are adversely affected by the existence of the dividing line, cutting through the territory of the island for the last 20 years by military force. Depopulation trends and the possible creation of socio-economic ghettoes are considered by Government as threads of great significance which need to be tackled urgently. Specific Development Programmes and the demand on public resources are under consideration for identifying measures and policies which should manage to counteract the situation created by the existence of the Buffer Zone.

(g) Housing is a symbol of status and economic prosperity, and most of the houses are built under the influence of social pressures which usually encourage the erection of houses bigger and of higher quality than reason could justify. The outcome of course is a higher cost of housing, and a waste of scarce and badly needed resources.

4.6. CONCLUSION

Generally speaking housing conditions in Cyprus are fairly satisfactory reflecting the relatively comfortable standard of living enjoyed by most of the people. There is a roof over the head of every household and nasty problems such as homelessness and overcrowding under unhygenic conditions do not exist in Cyprus.

Home-ownership is high, about 64%, and another 20% of the population live in rent-free accommodation mainly built by Government for the displaced population.

The majority of houses are routinely provided with all sorts of comforts and facilities such as piped water, electricity, telephones, separate kitchen and bath-shower and toilet inside the house. Furthermore most of the housing stock is of recent construction and only 13% was built before 1950.

No less than 64% of households enjoy the comfortable living of a semi-detached or single house and only 4% live in usatisfactory back-yard housing.

The basis of the sector is the private market which to a large extent operates satisfactorily and provides housing for most of the Cypriots. Parallel to the private market, there are several Government housing programmes which extend assistance to different groups of people. These programmes do not replace but generally support private initiative.

Housing finance is easily forthcoming and loan availability at market terms satisfies most demand in the sector. There are, however, problems still left to be resolved such as the modernization and proper maintenance of the aging part of the stock. The unification and simplification of housing policy is also an issue, but the most demanding problem is the accommodation of people earning less than C£7,000 p.a. under decent and adequate conditions. Private market and housing policy have so far failed to address this problem wich eventually will be a major challenge for the Government and society in general.

4.7 STRATEGIES AND POLICIES

The most elaborate policy statement in the field of housing, is in the Strategic Plan for Development, 1994-1998, under the title objectives and targets for housing. It is rather general but still demonstrates how much our society values housing. It reads as follows:

"The long term objective is to create conditions for the provision of high quality housing for all the Cypriots. This would require the creation of such a policy framework, where every family would be able to find finance, and if necessary assistance, to secure the purchase of a satisfactory house capable of meeting current demands and needs.

Housing programmes will adhere to a policy which as much as possible will support high quality home-ownership for every family in Cyprus".

In order to promote the achievement of this broad objective the following policy measures are recommended.

(a) Evaluation and re-assessment of existing housing programmes must be a top priority. This is necessary in order to achieve harmonisation, and possibly, unification of the various housing programmes on the basis of one general and comprehensive housing policy applicable to the total population. In this process certain programmes which satisfied their targets will have to be abolished and possibly replaced by new programmes designed to help towards the solution of newly identified problems.

(b) New programmes should provide housing assistance on the basis of common criteria such as income and housing needs.

(c) There is evidence indicating that both the private market as well as existing housing policy failed to help households earning less than C£7.000 p.a. to solve their housing problem. Both high downpayment and equally high monthly instalments prevent these people from entering the housing market. Any policy directed towards their problem must moderate these requirements and effectively reduce the cost of housing, by providing generous housing grants and low-interest long-term housing loans.

(d) Households earning less than C£5.000 p.a. which could not take advantage and benefit from the above policy, should be eligible to rent-subsidies, which would render them able to secure decent housing accommodation.

(e) The role of the Cyprus Land Development Corporation and the Housing Finance Corporation under the new unified housing policy for the total population should be expanded and increased. Provision of housing, building sites and housing loans at terms and prices affordable by middle and especially low income groups must govern their policy and programmes.

(f) Modernization and proper maintenance of the housing stock, especially in remote villages where there are indications of depopulation trends due to under development and economic stagnation and in certain central urban areas will require housing-improvement grants and low-interest loans. These policy measures will also be of help to areas adversely affected by the confrontation line where new housing investments and especially maintenance and repairs are disturbingly low.

(g) The problem of high cost of construction can be tackled by more mechanised and standardised methods of construction which potentially could increase productivity and reduce cost in the sector. The erection of reasonable size houses stripped of unnecessary luxuries could also help.

(h) The private market was and will continue to be the primary force and the basis of the sector. Housing policy will support rather than substitute the market which will be left to operate along the principles of free market. The strengthening and encouragement of the market will be a major policy objective and housing programmes will only be justified on social grounds.

Housing is an important aspect of life directly affecting the stability, welfare and comfort of the family. Cyprus is fortunate to have the overwhelming majority of the people living under satisfactory conditions. The Sector has problems and strengths which are recognised and acknowledged. The primary concern of the Government policy is to build on the strengths and eliminate the problems in order to make the privilage of decent housing affordable to each and every family in Cyprus. Towards this end social and economic mechanisms which helped the achievement of high standard housing will be further enhanced and maintained.

PART E

5.0 SAFETY IN HOUSING

5.1 INTRODUCTION

The repercussions of the 1974 Turkish invasion and occupation of Cyprus and the demand arising for economic development, resulted in high growth of the activity of the construction sector. Despite rapid developments in the past, the construction sector is presently facing several problems mainly related to the quality of the local building materials, which in turn affect the quality and safety of the structures.

5.2 SITUATION AND PROBLEMS IN THE CONSTRUCTION SECTOR

The main traditional system used in Cyprus for the construction of buildings is the reinforced concrete frame with infill walls and partitions made of burnt hollow clay bricks. Other systems which are usually used for the construction of non-residential buildings are the steel frame, a combination of reinforced concrete frame and steel frame, and light prefabricated units. The prefabricated system for the construction of houses was introduced recently. The frame normally consists of metal or wooden tubes and the walls are of sandwich type with polysterene inside and cementboards outside.

The main building materials used in the construction industry are concrete, steel, cement, hollow clay bricks, hollow concrete blocks, non-ferrous metal and wood.

Concrete is the prevalent building material, since the main construction system is the reinforced concrete frame. It is a mixture of cement, water and aggregates. Aggregates used in the production of concrete are divided into two categories: (a) the coarse aggregates such as crushed stones which are mainly diabase and some limestones, crushed or uncrushed gravels and (b) the fine aggregates such as natural sands, crushed stone sands or crushed gravel sands. Cement, which is widely produced in Cyprus, is of the Portland type.

The construction sector has been confronted with problems related to the quantitative sufficiency and quality of the local building materials. These problems, for which measures to tackle them have been or are being taken, are mentioned in the following paragraphs.

5.2.1 Problems related to the quantitative sufficiency of the local building materials

Prior to the Turkish invasion of 1974, the main sources of aggregates were the gravels and sands of river beds, terraces, sea-shores and the crushed aggregates produced

from the recrystallized limestone of the Kyrenia Range. The Turkish occupation of the northern part of the island and the termination of the exploitation of river beds and beaches for environmental reasons have brought about a serious shortage in the supply of aggregates in the construction industry. For a long-term solution of the problem it was decided to locate suitable rocks for the production of crushed coarse and fine aggregates. Today there are about thirty quarries with the relevant crushing plants, most of them located on mountain areas, which produce both coarse and fine aggregates.

The production of the hollow clay bricks fell sharply after the Turkish invasion of 1974, since most of the brick factories are in the occupied areas and this resulted in the increased use of load bearing hollow concrete blocks in order to cover the apparent acute shortage in hollow clay bricks. During 1978 new factories started producing large quantities of clay bricks and the load bearing concrete-block walls were replaced again by reinforced concrete frame construction and clay brick walls. Today only industrial buildings are still constructed with concrete-block walls.

Production of cement has always stood in high levels. Cement is produced in large quantities which can satisfy both the needs of the local construction industry and the demand for export purposes.

Appendix 3 shows the quantity index of local production of main construction materials and components for home consumption for the years 1989-1994. The quantity of the main locally produced construction materials was continually increasing during the period of 1989-1992 and fell between 1992-1993 (2,3% reduction) as a result of the drop in the construction of new hotels and hotel apartments and also in the construction of buildings for commercial purposes.

Generally speaking, during the period of 1989-1994, there was adequate supply of construction meterials to satisfy the demand generated by the construction sector, and the severe shortages that were observed immediately after the Turkish invasion are to a large extent eliminated.

5.2.2 Problems related to the quality of the local building materials

The quality of concrete depends on the quality of its constituents and especially on the quality of the aggregates. Aggregates must be sufficiently strong, free from constituents that can react harmfully with the cement, be

well graded and have very small or no moisture movement. The construction industry is presently facing great problems related to the quality of aggregates. Problems are divided into two categories: (a) problems related to the raw material such as high content of sulphates which are chemically incompatible with cement and can react harmfully with it, high content of pyrites and high absorption and (b) problems related to the production process of aggregates at the crushing plants such as not well grading, production of coarse aggregates with high content of particles of non-angular shape and production of fine aggregates with high content of aggregates which pass through the 75μm B.S seive.

2.3 Problems related to Legislation

Most of the Standard specifications which control the quality of the locally produced building materials were prepared and were implemented during the last few years. The lack of Standard specifications and quality control affected enormously the level of quality of the produced materials.

Although Cyprus is under high seismic activity and special design requirements should be followed, before 1986 there was no legislation dealing with the earthquake resistant-design of structures.

5.3 MEASURES AND BASIS FOR ACTION

Faced with the need to resolve these problems, the Government of Cyprus has adopted a number of measures. These measures are mentioned in the following paragraphs.

.3.1 Establishment of the Cyprus Organization of Standards and Control of Quality (CYS)

In order to improve and control the quality of local materials, including building materials, the Government established in 1975 the Cyprus Organization of Standards and Control of Quality (CYS), which comes under the aegis of the Ministry of Commerce, Industry and Tourism. CYS is a full member of the International Organization for Standardization (ISO) and an Affiliate Member of the European Committee for Standardization (CEN). CYS also maintains close relations with foreign National Standard Bodies such as the British Standard Institution (BSI) and the Hellenic Organization for Standardization (ELOT).

The basic aims of the Organization are the following:

(a) The preparation, revision or amendment of Standard specifications and Codes of Practice and the promotion of their implementation with the objective of improving the quality of industrial products, industrial efficiency and productivity and promote trade.

(b) The promotion of the standardization of all building component units in terms of size, modular coordination and quality to meet the requirements of the European Union market.

(c) The harmonization of Cyprus Standards with the European Standards.

Objectives (b) and (c) result from the Government's application for full membership of Cyprus to the European Union.

5.3.2 Preparation of Cyprus Standards for building materials

Bearing in mind the European orientation of the Cyprus economy, Cyprus Standards are, as a rule, adoptions of the corresponding European Standards. However, in cases where this is not practicable, such as Standards which refer to products with local characteristics, their preparation is undertaken by the relevant Technical Committees of CYS where all interested parties are represented.

So far CYS has published fifty eight (58) Standards for the building and construction sector. These Standards cover mainly Standards for locally produced materials such as aggregates, cement, clay bricks, concrete, timber, pipes and lime. Also CYS has published Standards for modular coordination in buildings and Codes of Practice for concrete structures and for thermal insulation in buildings. Nine of these Standards are designated as compulsory by the Minister of Commerce, Industry and Tourism for reasons of public interest and the rest are implemented on a voluntary basis. A list of existing Standards for building and construction is given in Appendix 4.

In order to achieve the objective of qualitative improvement of local building materials, during the last two years CYS proceeded to the compulsory implementation of the following Cyprus Standards:

(a) The Cyprus Standard for "Ready-mixed Concrete" CYS111. It was published in 1992 and its compulsory implementation commenced on 1st October, 1993. The Public Works Department is responsible to supervise the compulsory implementation of the Standard.

(b) The "Cyprus Standard Code for the design and construction of Reinforced Concrete Structures" CYS159 Part 1 and Part 2. It was published in 1994 and its compulsory implementation commenced on 1st June, 1995. At the same time a Technical Committee was established by the Government to supervise the compulsory implementation of the Code. The Committee is also responsible for any necessary future revision. The Code gives recommendations for the design and detailing of all structural members of a reinforced concrete structure and specifications for construction. It has been based on the corresponding publication of the European Committee for concrete (CEB) and following the decision of the Council of Ministers, it was incorporated in "The Streets and Buildings Regulations" which in its new form consists the "Cyprus Building Regulations". It must be mentioned that before the implementation of the Code the structures were designed according to the requirements provided in Codes of Practice of other countries. The adoption of these provisions, in many cases, resulted in the reduction of the design safety margin, because these provisions could not apply in Cyprus, since different local conditions exist.

The Cyprus Standards for "Road Aggregates" CYS 99, for "Aggregates from Natural Sources for Concrete" CYS 64, and for "Sands for Mortars and Renderings" CYS 14 have been implemented on a compulsory basis since 1983. The relevant Technical Committee of CYS, which is responsible for the revision of these Standards, is presently working on their revision. Strong emphasis is given to the revision of the Standard CYS 64 for aggregates in order to include strict specifications aiming at the improvement of their quality.

The existing Cyprus Standard for "Portland Cement" CYS 16, is currently under revision. The relevant Technical Committee is working on the harmonization of the Standard with the requirements of the corresponding European Standard.

CYS has recently completed its work on the preparation of Standards for precast concrete paving flags and kerbs, masonry units and paving blocks, CYS 283, CYS 284 and CYS 287 respectively. These Standards will be published in the near future.

A new Standard for thermal insulation in buildings is also now under preparation.

5.3.3 Introduction and application of Antiseismic Standards and measures

Cyprus is under high seismic activity and therefore the structures must be designed to withstand earthquake forces. Faced with the need for a rational seismic design of structures, the Government established in 1978 the Cyprus Committee of Antiseismic Measures (CCAM). This Committee in collaboration with the Technical Committee for Earthquake Engineering of the Cyprus Civil Engineers and Architects Association prepared regulations for the earthquake resistant design of structures. The first earthquake regulations prepared known as "Brief Measures for Earthquake Resistant Design" were enforced in January, 1986, by the Mimistry of the Interior. According to these regulations all buildings must be designed to withstand earthquake forces in conjuction with other permanent or variable actions. Cyprus was divided into three seismic zones with different seismic force coefficients. In these regulations some simple requirements are provided only for the earthquake resistant design of regular buildings, whereas no requirements are provided for non-regular or important buildings. For these buildings a complete antiseismic design must be carried out. In order to improve these regulations, the two Technical Committees commenced work on the preparation of the "Cyprus Seismic Code for Reinforced Concrete Structures". The Code was completed in 1992 and was implemented on 1st January, 1994. At the same time a Technical Committee of Antiseismic Measures was established by the Government to supervise the implementation of the Code. The Committee is also responsible for any necessary future revision. The Code sets down the minimum design requirements that must be met when earthquake action is considered. It has been based on the corresponding publication of the European Committee for concrete, the CEB Bulletin 160 and it was incorporated in "The Streets and Buildings Regulations".

5.3.4 Revision of existing Building Regulations

The existing Law related to the construction and erection of buildings is cited as "The Streets and Buildings Regulation Law" and the relevant regulations are the "Streets and Buildings Regulations", first published in September, 1946. The above Law has been subsequently revised many times.

As previously mentioned, the "Cyprus Seismic Code" and the "Cyprus Standard Code for the design and construction of Reinforced Concrete Structures" CYS 159, were incorporated in "The Streets and Buildings Regulations".

Parallel to the compulsory implementation of these Codes, the Ministry of the Interior has proceeded to the amendment of article 8 of "The Streets and Buildings Regulation Law", in order to include provisions for the control of the static and antiseismic design calculations. According to these provisions, the Competent Authorities have the responsibility for the control of the static and antiseismic design calculations. Also, the Ministry of the Interior is presently preparing another amendment to "The Streets and Buildings Regulation Law" with the addition of a new article that will refer to the compulsory supervision of site works, during the erection of the structures, by qualified Site Engineers.

New regulations were added to "The Streets and Buildings Regulations" regarding fire resistance known as the "Fire Regulations", heat insulation, sanitary works, etc.

.3.5 Laboratory testing of building materials

In order to supervise the implementation of the compulsory Cyprus Standards the Competent Authorities carry out sampling and testing procedures. Testing Centres are housed in existing Government Laboratories and they have the capability of performing a wide range of tests and analyses, as well as, providing technical advice and assistance to all interested parties. The Cyprus Organization of Standards and Control of Quality evaluates the results of all tests on the samples taken by the Compe tent Authorities and where necessary, appropriate recommendations and advice is offered.

.3.6 Standardization of building materials

Strong emphasis has been given by the Government to the introduction of bigger scale standardization of building materials. As previously mentioned one of the basic aim of CYS is to promote the standardization of all building component units in terms of size, modular coordination and quality. Despite this, the standardization in the construction industry is still at low levels, because housing is mostly controlled by the private sector and the individual.

.3.7 Geotechnical mapping of Cyprus and other measures undertaken by the Geological Survey Department

The Geological Survey Department has prepared geotechnical maps for both urban and rural areas. These maps include all the necessary geotechnical data about soil

conditions. In urban areas, geotechnical maps have been prepared for Nicosia and Larnaca towns and similar maps are under preparation for Limassol and Paphos towns, as well as, for other major towns. In rural areas, geotechnical-hazard maps have been prepared in areas prone to landslides.

Apart from the geological-geotechnical research, the Geological Survey Department has also undertaken supporting measures for the construction sector. These concern the provision of information and advisory services, laboratory testing, chemical analysis and control of the quality of the materials used in the construction industry and the location of raw materials. The Department is responsible for the quality control of the produced aggregates. It carries out sampling of the produced by the quarries aggregates and testing their quality according to the relevant CYS Standard. The above services are provided both to the public and the private sector.

5.3.8 Building research policies and experimental building projects

In Cyprus there is no Building Research Establishment and the work carried out in research is very limited. The Higher Technical Institute is the main place where officially some work is done in the field of research and experimentation. Large contracting and industrial companies have also carried out limited research aiming at improving the quality of materials and components they produce and in finding new materials, components and methods in building construction.

5.3.9 Organization of seminars

The Government, the Scientific Technical Chamber of Cyprus, the Cyprus Organization of Standards and Control of Quality, the Cyprus Civil Engineers and Architects Association and other Associations, organize training seminars for Engineers, concerning subjects related to the quality and safety of structures such as building materials and related problems, earthquake resistant design of structures, explanation of the Cyprus Codes and Cyprus Standards and others.

5.4 STRATEGIES AND POLICIES

During the next few years, the Government efforts will continue in order to improve the quality and safety of the structures. Policies will be as follows:

(a) Great emphasis will be given in the fields of geographical distribution and qualitative control of building materials aiming at more satisfactory geographical location and qualitative improvement. For securing adequate building materials the relevant Government services will continue to have a direct role for locating suitable reserves of raw materials including investigations for local production and use of new building materials. Also, further application of Standards for building materials will contribute to the installation of modern machinery and equipment at crushing plants for raw materials and at industrial plants producing materials for the construction sector, and also to the extraction in areas with suitable and homogeneous reserves of materials.

(b) The Cyprus Organization of Standards and Control of Quality, with the ultimate goal of promoting and upgrading quality of local materials, will continue to work on the improvement of existing Standards and the introduction of new Standards for building materials for the construction sector. Also CYS will continue the efforts for voluntary implementation of the Cyprus Standards by the industries and for compulsory implementation of Standards where indicated.

(c) Great emphasis will be given to the revision of existing Building Regulations in order to be developed, modernized and harmonized with the European building Regulations. Also emphasis will be given to the preparation of new regulations for water proofing and sound insulation in buildings.

(d) Strong emphasis will be given to the revision of the "Cyprus Seismic Code" when it is considered necessary. New provisions will be added for carrying out compulsory geotechnical investigations prior to the erection of any type of structure, especially in areas of high seismic activity. Parallel measures will concern investigations and studies for the seismic risks in various areas and the improvement of the operation of the existing Seismic Station.

(e) Provisions will be made to strengthen the Testing Centres of the various relevant Government services with regard to building materials and products, in order to ensure the right application of the compulsory Cyprus Standards. Also, the necessity for a legal framework that will govern the terms of operation of private workshops for testing building materials and for geotechnical research, will be studied.

(f) The Geological Survey Department will continue to work on the geotechnical mapping of rapidly developing areas. Also, within the next few years, it is considered imperative to prepare earthquake frequency maps and seismotectonic maps for all areas. These maps will help towards the evaluation of the seismic risk.

All of the above efforts will eventually help towards the improvement of the quality and safety of the structures.

APPENDICES

APPENDIX 1.

Forecast of Municipal Solid Waste quantities for Cyprus Districts for the Year 2007

District	Residents tons/year	Tourists tons/year	Others tons/year	Total tons/year
Nicosia	139,400	1,200	47,200	187,800
Limassol	94,300	14,200	26,300	134,800
Larnaca	54,900	6,400	20,000	81,300
Paphos	30,300	22,400	9,900	62,600
Famagusta	17,800	38,700	7,200	63,700
Total	336,700	82,900	110,600	530,200

Composition of Municipal Solid Waste in Cyprus, in the year 2007

Fraction	Total tons/year	As a (%)
Glass	15,900	3
Cardboard	42,400	8
Paper	90,100	17
Metal	21,200	4
Plastic	68,900	13
Garden waste	58,300	11
Organic	127,200	24
Combustible	58,300	11
Non combustible	47,700	9
Total	530,000	100

Estimate of Waste Arisings in Cyprus 1993 According to District and Waste Producers.

District	Residential areas tons/year	Tourist areas tons/year	Others tons/year	Total tons/year
Nicosia	118,300	600	26,200	145,500
Limassol	74,900	6,300	14,600	95,800
Larnaca	49,600	3,000	11,100	63,700
Paphos	25,000	5,900	5,500	36,400
Famagusta	13,200	10,200	4,000	27,400
Total	281,400	26,000	61,400	368,800
Annual per Capita Production (in Kgs)	468	670	102	

APPENDIX 2.

Statistical data on the water supply of the towns over the last twenty two years.

URBAN WATER SUPPLY IN NICOSIA

Year	Consumers *		Input into System (at Service Area Outlets) m^3 **
	Number at end of year	Increase (%)	
1972	17 601	-	7 564 804
1973	18 989	7,9	7 460 286
1974	20 796	9,5	7 550 913
1975	21 978	5,7	7 532 363
1976	23 628	7,5	8 137 580
1977	25 646	8,5	8 551 570
1978	27 944	9,0	8 307 170
1979	30 337	8,6	8 559 184
1980	34 181	12,7	9 152 909
1981	35 366	3,5	8 676 120
1982	37 513	6,1	9 001 875
1983	39 554	5,4	8 984 890
1984	41 297	4,4	9 450 498
1985	42 412	2,7	10 393 365
1986	43 984	3,7	10 218 459
1987	45 550	3,6	10 911 284
1988	47 200	3,6	11 314 893
1989	48 762	3,3	11 796 863
1990	50 692	3,8	11 328 022
1991	52 808	4,2	8 540 603
1992	54 253	2,7	9 669 653
1993	55 546	2,4	11 381 300

* Due to lack of information on the number of consumers in the Turkish occupied sector the figures in this column refer to the Government controlled area of Nicosia only.

** These figures cover the whole of Nicosia.

APPENDIX 3.

QUANTITY INDEX OF CONSTRUCTION MATERIALS, 1989-1994.

CONSTRUCTION MATERIALS	INDEX (1985 = 100,0)						ANNUAL CHANGE (%)					
	1989	1990	1991	1992	1993	1994	1989	1990	1991	1992	1993	1994
Cement	133,9	144,9	149,7	159,6	164,2	163,2	13,3	8,2	3,3	6,6	2,9	- 0,6
Mosaic tiles	119,2	134,4	140,9	142,0	133,2	113,4	8,9	12,8	4,8	0,8	- 6,2	-14,9
Bricks	112,0	122,3	128,0	132,7	133,1	116,0	8,4	9,2	4,7	3,7	0,3	-12,1
Roof tiles	205,2	263,8	227,3	242,8	190,4	165,5	48,1	28,6	-13,8	6,8	-21,6	-13,0
Sand and gravel	108,9	117,9	122,4	129,2	135,8	134,9	10,2	8,3	3,8	5,6	5,1	- 0,2
Havara	92,3	96,6	96,6	100,1	101,9	142,7	5,4	4,7	0,0	3,6	1,8	40,0
Building stone	47,7	59,8	34,5	20,0	118,5	358,8	-44,8	25,4	-42,3	-42,0	492,5	202,8
Lime	91,4	94,8	83,0	71,7	76,1	71,5	3,7	3,7	-12,4	-13,6	6,1	- 6,1
Gypsum	45,5	54,2	72,7	72,4	91,4	70,7	- 2,8	19,1	34,1	- 0,4	26,2	-22,6
Asbestos-cement products	63,2	67,6	39,6	39,7	35,4	25,9	-42,9	7,0	-41,4	0,3	-10,8	-26,8
Iron structures	102,5	101,1	94,8	105,6	99,1	105,6	7,3	- 1,4	- 6,2	11,4	- 6,2	6,6
Carpentry	95,5	89,1	106,1	104,9	103,0	75,1	-13,2	- 6,7	19,1	- 1,1	- 1,8	-27,1
Iron bars	145,0	138,7	149,0	161,3	157,0	159,2	12,8	- 4,3	7,4	8,3	- 2,7	1,4
Electric supplies:												
(a) Public sector	80,6	110,1	118,1	120,8	135,9	148,3	0,2	36,6	7,3	2,3	12,5	9,1
(b) Private sector	134,9	150,9	184,0	201,4	176,5	236,9	9,9	11,9	21,9	9,5	-12,4	34,2
Sanitary fixtures	122,3	155,9	147,0	159,4	131,1	135,2	8,5	27,5	- 5,7	8,4	-17,8	3,1
Bitumen	227,4	262,4	208,9	210,4	244,8	238,2	33,0	15,4	-20,4	0,7	16,3	- 2,7
TOTAL	114,0	121,4	126,0	133,1	130,1	130,3	5,3	6,5	3,8	5,6	- 2,3	0,1

APPENDIX 4.

List of Cyprus Building Standards.

1. **Aggregates**

CYS 14:1986	Specification for Sands for Mortars and Renderings
CYS 64:1986	Specification for Aggregates from Natural Sources for Concrete
CYS 99:1986	Specification for Road Aggregates

2. **Lime**

CYS 65:1978	Specification for Building Limes

3. **Thermal insulation**

CYS 210:1991	Thermal Insulation - Physical Quantities and Definitions
CYS 211	Thermal Insulation - Calculations Methods
Part 1:1991	Steady State Thermal Properties of Building Components and Building Elements.
Part 2:1991	Thermal Bridges of Rectangular Sections in Plane Structures

4. **Terrazo Tiles**

CYS 15:1979	Specification for Terrazo Tiles

5. **Timber**

CYS 3:1976	Coniferous Sawn Timber - Sizes - Terms and Definitions
CYS 4:1976	Coniferous Sawn Timber - Sizes - Methods of Measurement
CYS 5:1976	Coniferous Sawn Timber - Nominal Dimensions

CYS 6:1976	Coniferous Sawn Timber - Sizes - Tolerances and Shrinkage
CYS 72	Specification for Wood Chipboard
Part 1:1988	AMD No.6 of 1986-03-20
CYS 73:1979	Methods of Test for Particle Board
CYS147:1986	Specification for Plywood Manufactured from Tropical Hardwoods

6. **Additives**

CYS 178:1988	Definitions, Classifications and Marking of Admixtures for Concretes, Cement - Mortars and Grouts

7. **Concrete**

CYS 13:1987	Concrete Technology
CYS111:1990	Specification for Ready - mixed Concrete
CYS148:1985	Concrete - Classification by Compressive Strength
CYS149:1985	Concrete Tests - Dimensions, Tolerances and Applicability of Test Specimens
CYS 152	Concrete Tests - Tests Specimens
Part 1:1986	Sampling of Fresh Concrete
Part 2:1986	Making and Curing of Test Specimens for Strength Tests
CYS153:1986	Concrete - Determination of Compressive Strength of Test Specimens
CYS154:1986	Fresh Concrete - Determination of Consistency - Slump Test
CYS155:1986	Fresh Concrete - Determination of Consistency - VEBE Test

CYS156:1986	Fresh Concrete - Determination of Consistency - Degree of Compactibility
CYS157:1986	Concrete - Classification of Consistency
CYS159 Part 1:1991	Code for Concrete Structures
CYS159 Part 2:1987	Code for Concrete Structures

8. Modular Coordination

CYS 51:1984	Building Construction - Modular Coordination - Basic Module
CYS 52:1984	Building Construction - Modular Coordination - Principles and Rules
CYS 53:1980	Modular Coordination - Preferred Range of Coordinating Sizes of Opening for Doorsets, External and Internal
CYS 54:1981	Modular Coordination - Preferred Range of Coordinating Sizes of Openings for Windows and Shutters
CYS126:1984	Building Construction - Modular Coordination - Vocabulary
CYS127:1982	Building Construction - Modular Coordination - Modular Floor Plane for Vertical Dimensions
CYS128:1982	Building Construction - Modular Coordination - Storey Heights and Room Heights
CYS129:1982	Building Construction - Modular Coordination - Series of Preferred Multimodular Sizes for Horizontal Dimensions
CYS130:1982	Building Construction - Modular Coordination - Sub-Modular Increments
CYS132:1984	Kitchen Equipment - Coordinating Sizes

CYS133:1984	Kitchen Equipment - Limit of Size
CYS134:1984	Kitchen Equipment - Sizes of Openings for Building Appliances
CYS137:1984	Building Construction - Tolerances for Building - Vocabulary
CYS139:1984	Building Construction - Modular Coordination - Multimodules for Horizontal Coordinating Dimensions

9. **Clay Bricks**

CYS 19:1989	Specification for Clay Bricks

10. **Cement**

CYS 16:1980	Specification for Portland Cement - Ordinary and Rapid Hardening
CYS 49	Method of Testing Cement
Part 2:1977	Physical Test - Compressive and Flexural Strengths of Plastic Mortar (Rilem - Cembureau Method)
CYS 50	Chemical Analysis of Cements
Part 1:1977	Main Constituents of Portland Cement
Part 2:1977	Minor Constituents of Portland Cement
Part 3:1977	Determination of Sulphur as Suphide

11. **Asbestos Cement Products**

CYS 67:1985	Specification for Asbestos Cement Pressure Pipes and Joints
CYS 68:1978	Asbestos - Cement Products - Sampling and Inspection
CYS151:1985	Specification for Asbestos Cement Pipes, Joints and Fittings for Sewerage and Drainage
CYS162:1987	Specification for Asbestos-Cement Corrugated Sheets and Fittings for Roofing and Cladding

CYS163:1987	Specification for Asbestos-Cement Assymmetrical Sections Corrugated Sheets and Fittings for Roofing and Cladding
CYS164:1987	Specification for Asbestos-Cement Flat Sheets

12. **Metal Pipes**

CYS150:1986	Specification for Screwed and Socketed Steel Tubes and Tubulars and Plain End Steel Tubes