

# KURDISTAN ENGINEERS UNION

## Research Project Urban design

The preparation

Architect

Ibrahim Muhammad Ilyas

# Contents

- 1- Urbanization ..... page 3
- 2- Types of settlements ..... page 4
- 3- Urbanization and urban growth ..... page 8
- 4- What happen when urban growth? ..... page 9
- 5- Why Does Urban Settlement Grow? ..... page 9
- 6- Position of urban design within planning and design levels ..... page 10
- 7- Definition of urban design ..... page 12
- 8- REASONS TO PREPARE AN URBAN DESIGN PLAN ..... page 17
- 9- THE URBAN DESIGN PROCESS ..... page 18
- 10- The ESSENTIAL ATTRIBUTES OF AN URBAN DESIGN PLANNING PROCESS ....page 19
- 11- COMPONENTS OF AN URBAN DESIGN PLAN REPORT ..... page 20
- 12- From two dimensional to three dimensional approach ..... page 28
- 13- Masses on a ground ..... page 30

# Urbanization

- Urbanization means the removal of rural character of a town or an area.
- A process associated with the development of civilization.
- Demographically the term denotes redistribution of population from the rural to urban settlements.

## Types of settlements

### **Urban settlements.**

A dense place where people live, work and play, using a civilized way of living, dealing with each other through non face to face relationships. Specialization of work is the main feature, the community is divided into groups depending on the socio-economic position. Where wealth, power, goods, services and knowledge, are accumulated and exchanged between population, between the urban settlement and other settlements, and between the settlement and its region from other side.

- Because of the reaction between the accumulative people, wealth and knowledge, the development in every single layer is very rapid.
- Changes seemed to be fast and continuous .
- The world has never experienced urbanizations on the scale that has accrued during the 20<sup>th</sup> century.
- Writing in the mid-1990s, Philip Hirsch described urbanization as (one of the most dramatic demographic, economic, and social changes occurring in the world.

- **Urban settlement** is an area of habitation that provides services to the surrounding countryside.
- As soon as a rural settlement begins to provide services such as shops or manufacturing then it has become an urban settlement.
  
- **Rural settlement** is a dwelling or group of dwelling that simply provides housing for farm workers. In other word no services are provided rather than the dormitory function of providing accommodation for the residents.

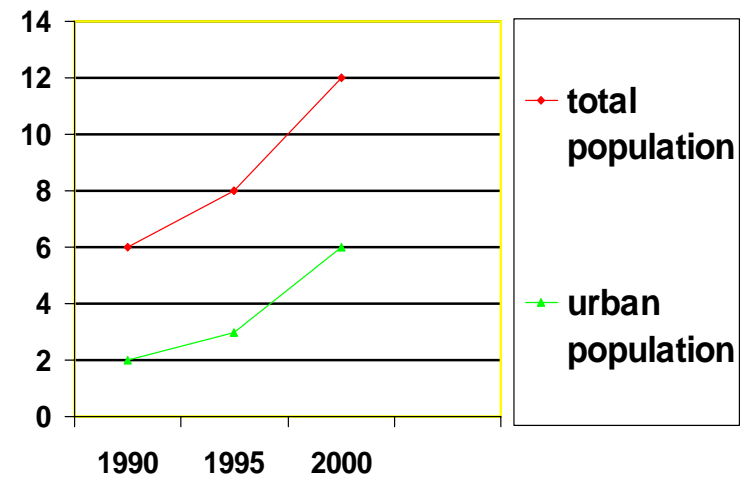
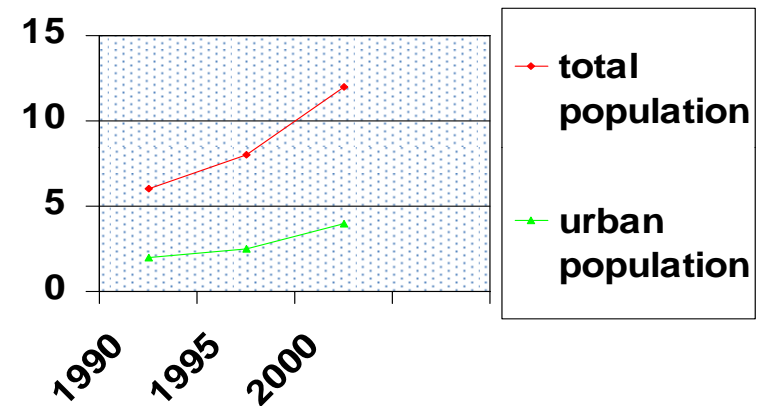
## **Rural settlements**

A low density place in a country side ,where people live , work and play, using a rural way of living, dealing with each other through face to face relationships. Agricultural work (planting) is the mean feature, where the agricultural products of the community is transported to an urban settlement ( mainly) and some essential goods and essential services are supplied by the nearby same urban settlement.

- According to other regulations, such as those which had been implemented in Iraq for formal and administrative purposes , the population size is essential. So any settlement that has a population size of 5000 persons or more was considered as an urban settlement.

## Urbanization and urban growth

- Urban growth means the increasing in the number of people living in an urban area.
- Urbanization means the increasing in the proportion of people living in an urban area.
- In this graph the urban population was 33% of the total population in 1990 and was still at the same proportion in 2000, while in the second graph the proportion increased to (50%).





## What happen when urban growth?

- The total population size increase.
- The ratio population in urban center increase.
- The number of urban centers increases.
- The area of urban settlement extends.

## Why Does Urban Settlement Grow?

There are two reasons causing the urban growth:-

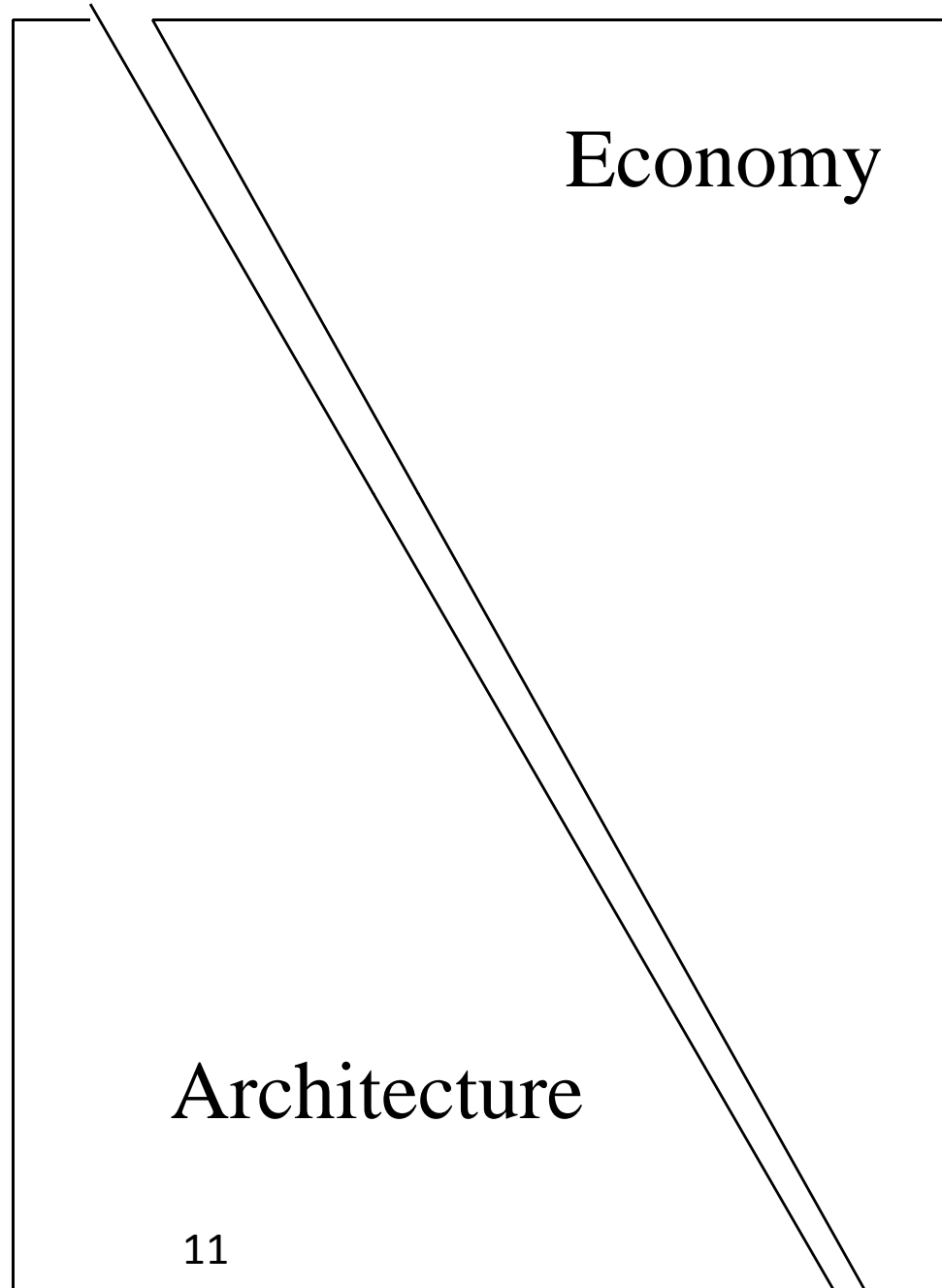
1. The natural growth of population
2. The immigration which could be divided by two categories:-
  - Internal immigration
  - External immigration.

## Position of urban design within planning and design levels

- National or federal level (Iraq)
- Regional level (Kurdistan)
- Local level (Erbil)
- Detail level ( city center)
- Urban design ( citadel)
- Architectural design ( building)
- Engineering design of building ( structure, mechanical, and interior)

National  
public

Detailed  
private



## Definition of urban design

- The art of shaping the interaction between, people and places, environment and urban form, nature and built fabric, and influencing the processes which lead to successful villages, towns and cities.
- Un integrant part of city planning treats with three dimensional visual design at the same time treats with the physical factors like pollution, feeling the danger and security.
- It aims to regulate and organize both urban elements and human activities in the built environment.
- A part of city planning which treats with aesthetic values through the form and order in the city.

## More definitions

- The interface between architecture, town planning and related professions.
- The three dimensional design of places for people and their subsequent care and management.
- A vital bridge giving structure and reality to two dimensional master plans and abstract planning briefs, before detailed architectural or engineering design can take place..
- The design of built –up area at the local scale, including the grouping of buildings for different use. the movement systems and services associated with them, spaces and urban landscape between them.
- The creative activity by which the form character of urban environment at the local scale may be devised.
- Urban design is a discipline between planning and architecture. it gives three dimensional physical form to policies described in the comprehensive plan. It focuses on design of the public realm, which is created by both public spaces and the buildings that define them.

## Definitions

- Urban design concerns with:-
  - ✓ Plan ( comprehensive plan- the mother)
  - ✓ Preparation of design guidelines for buildings.
  - ✓ The design for public realm- the open space, streets, sidewalk, and plazas between and around buildings.
  - ✓ The public interests issues of buildings
    - ✓ The public interests issues of buildings
      - Massing
      - Placement
      - sun and shadow
      - Wind issues

- Issues to be considered in urban design
  - ✓ Existing development
  - ✓ Proposed development
  - ✓ Utility infrastructure
  - ✓ Streets framework
  - ✓ Open space framework
  - ✓ Environmental framework
  - ✓ Sustainable development

- Urban design plans require interdisciplinary collaboration among urban :-
- Urban Designers
- Architects
- Landscape architects
- Civil engineers
- Environmental engineers
- Market analysts

### Central role of Urban Designer.

- The central role of the urban designer is to serve as the one who can often integrate the work of a diverse range of specialists.



## REASONS TO PREPARE AN URBAN DESIGN PLAN

- Forging Visions
- Devising Strategies
- Creating Good Locations
- Marketing Sites or Areas
- Forming Treaties

## THE URBAN DESIGN PROCESS

- Un urban design plan process has much in common with a comprehensive planning process, both include basic elements such as data collection and analysis , public participation, and involvement of other disciplines.
- However urban design differs in the use of three dimensional design tools to explore alternatives and to communicate ideas.

# THE ESSENTIAL ATTRIBUTES OF AN URBAN DESIGN PLANNING PROCESS

- Public Outreach
- Involvement of Major Stakeholders
- Multi-Disciplinary team
- Focus on Implementation
- Design as a Tool for decision making

# COMPONENTS OF AN URBAN DESIGN PLAN REPORT

- Executive Summary
- Existing Conditions
- Analysis Drawings
- Summary of Issues
- Development program
- Urban Design plan
- Streets Framework plan and Streets Sections
- Open space Framework plan
- Perspective Drawings
- Design Guidelines
- Implementation and phasing Plan

- Urban design plans prepared for various areas such as:-
  - ✓ Downtowns
  - ✓ Waterfronts
  - ✓ Campuses
  - ✓ Corridors
  - ✓ Neighborhoods
  - ✓ Mix-use developments
  - ✓ Special districts



## ٩- التصميم المفصل ٣-٩ المنطقة الترفيهية

## سماراء

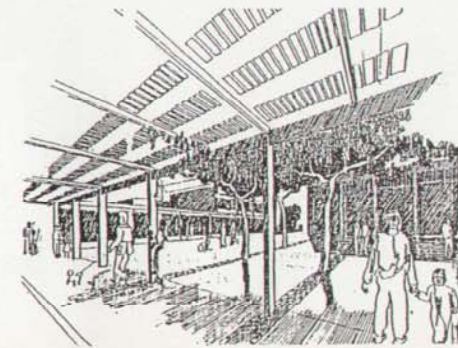
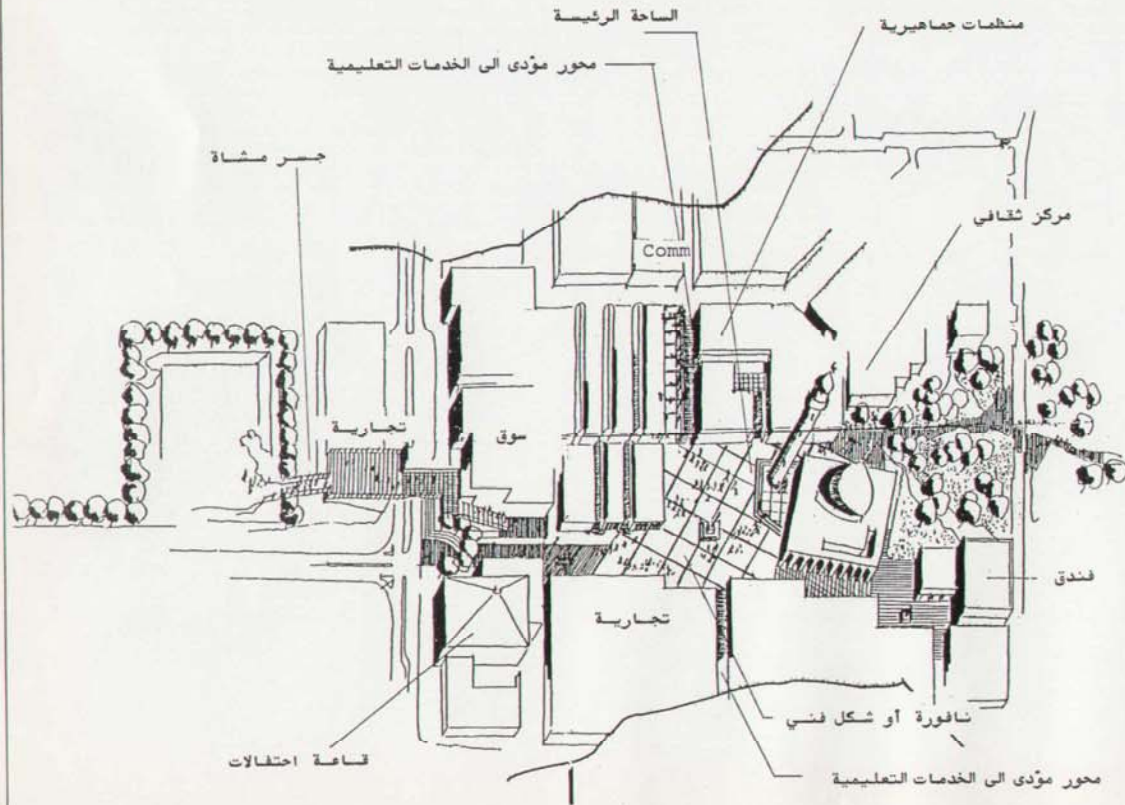
وتشكل هذه الساحة محيطا ملائما للجامع .  
شرقا من الجامع سوف تغيير هذه الساحة الى المنطقة الخارجية  
الاعتيادية لتكون محيطا ملائما للخدمات الثقافية هنالك .

المنظر

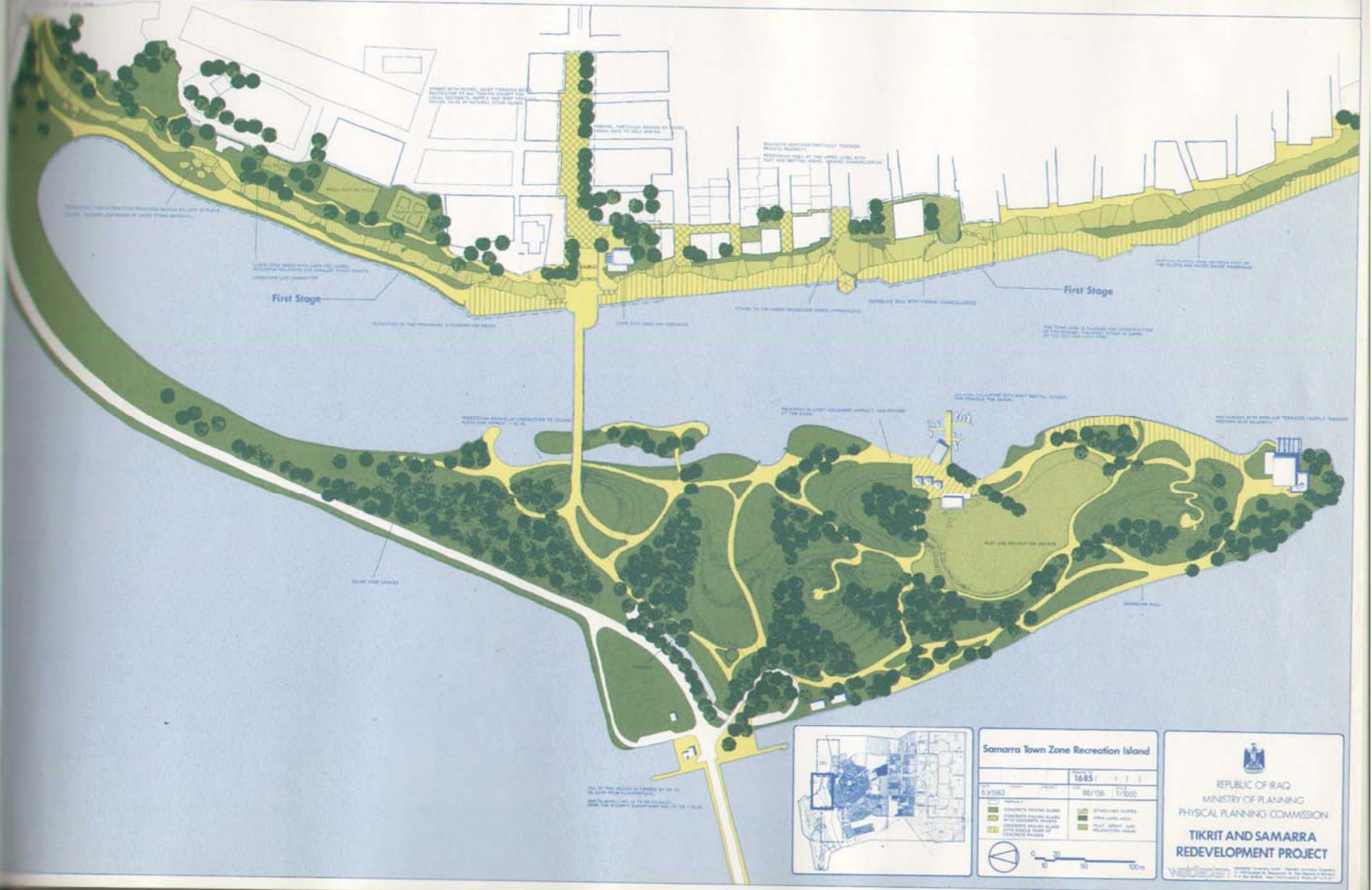
مركز المحافظة

يضم المدخل الغربي من خدمات مركز المحافظة على شكل شبكي  
وهذه الشبكة تكون مكونة من الاشجار . وبعد عبور الشارع  
شرقا يضيق الطريق ليندمج مع مركز المحافظة وطبيعتها  
الحضرية ومن ثم يتسع الطريق بعد مروره بالاسواق ويشكل  
بهذا ساحة عريضة مفتوحة وتصب في هذه الساحة حيث تستخدم  
طرق جانبية آتية من اماكن اخرى من مركز المحافظة .

ان الامكانيات الترفيهية التي ستوفر هنا تقع من حيث حجمها  
ونوعيتها بين الامكانيات الترفيهية المتوفرة في المناطق  
السكنية وتلك الموجودة في مركز المحافظة . وان النسبة الزائدة  
للامكانيات المتوفرة والتوسع المكاني يعكس مستوى اعلى من  
الاحتياجات الضرورية في مستوى المناطق السكنية .



# TOWN ZONE – RECREATION ISLAND SAMARRA





# 9. Detailed Design

## 9.5 River Frontage

# SAMARRA

### IV. PROPOSALS

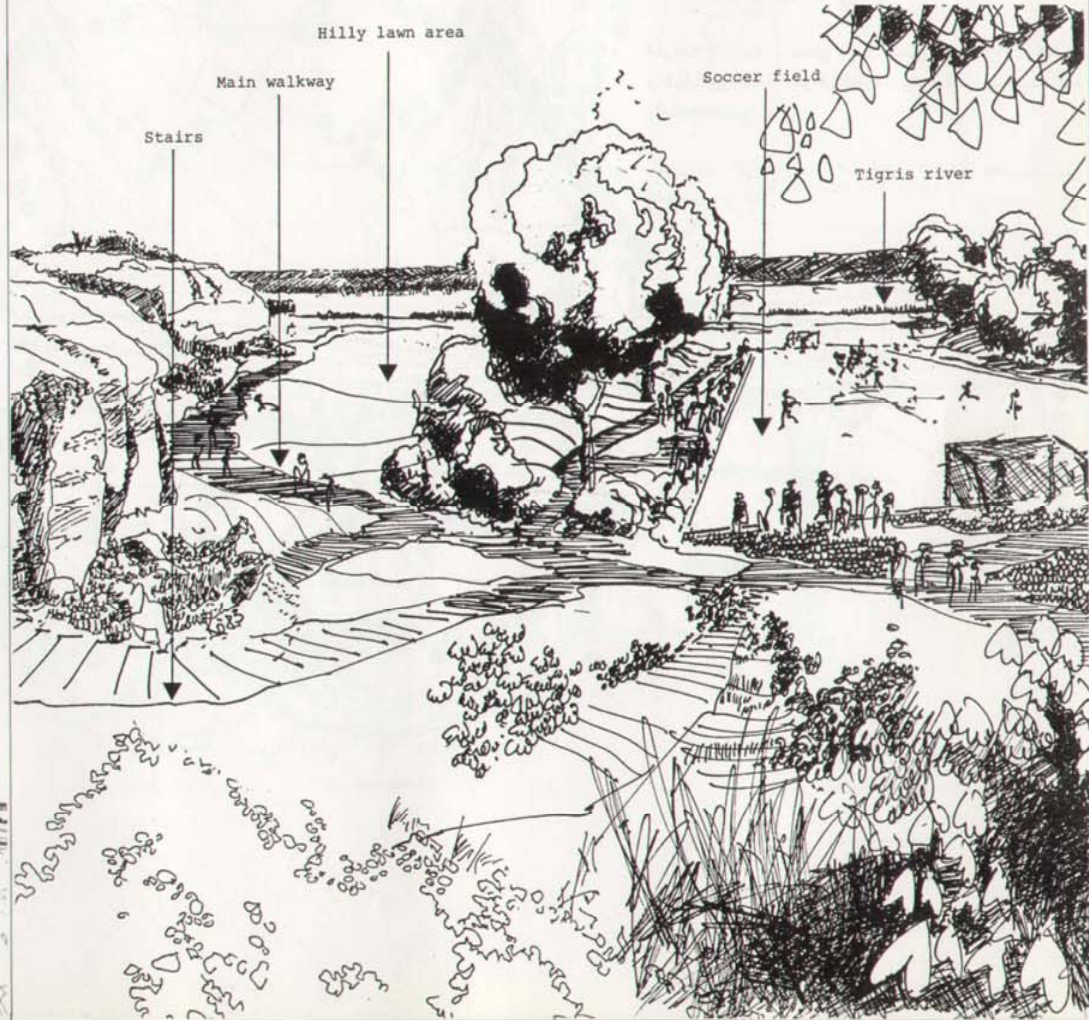
#### 3. RIVER ZONE

The character of the River Zone should be that of a natural and spacious delta landscape which is to be used for recreation, yet in which nature, vegetation and the river are dominant. For this reason only a small area near the hotel will feature intensive activities such as possibilities for sport and games. The main part of the River Zone should be divided into individual agricultural plots. In this way these areas will be cared for and maintained while also allowing use for agricultural purposes. They will be subdivided by walkway/bicycle paths and are thus also accessible for visitors and local citizens.

In order to prevent flooding the whole area must be filled to an elevation of 62 meters.

The activities area near the hotel should be realized as Stage 1, while the agricultural area is planned for Stage 2.

### RECREATION AREA, STAGE 1



### AGRICULTURAL LAND, STAGE 2



## 9. Detailed Design

### 9.3 Recreation Area

# SAMARRA

#### CENTRAL AXIS

After extensive discussions of all of these proposals it was decided to provide the detailed planning for the central axis in the scale of 1:500. These proposals are briefly described as follows.

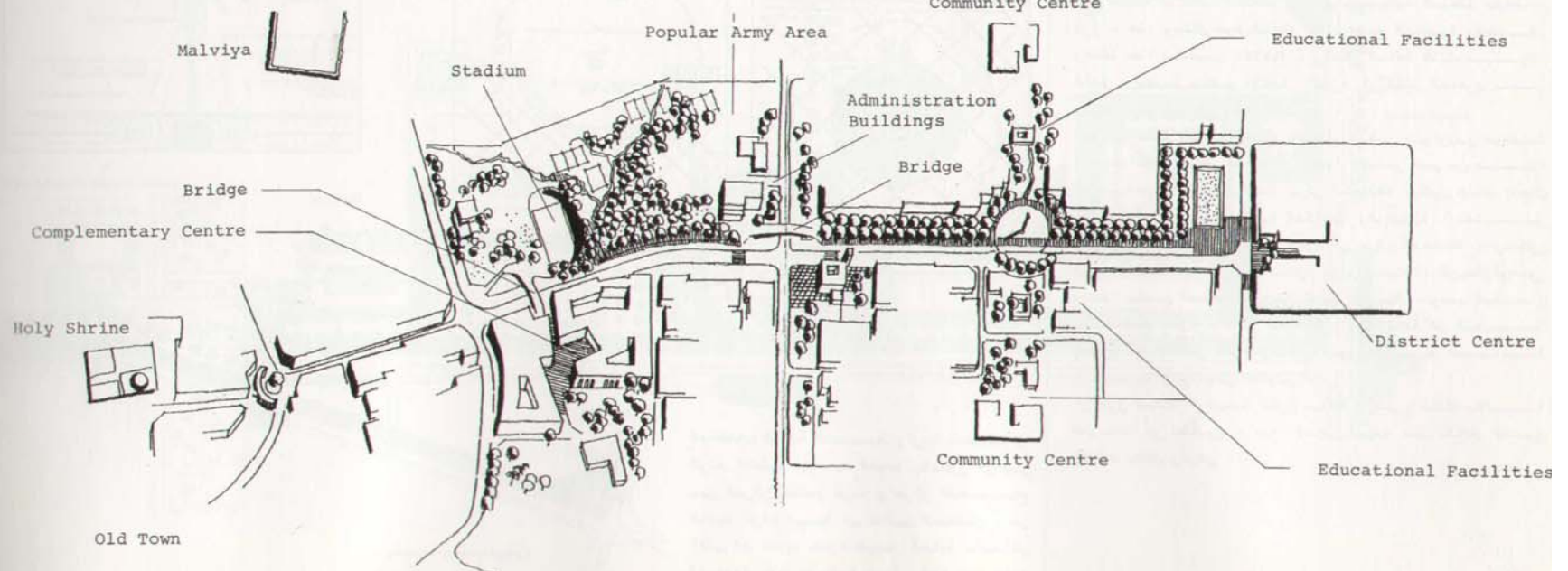
The western part, from the Holy Shrine to the second ring, is foreseen in the Master Plan as being a commercial axis and is described in detail in the Urban Renewal Report.

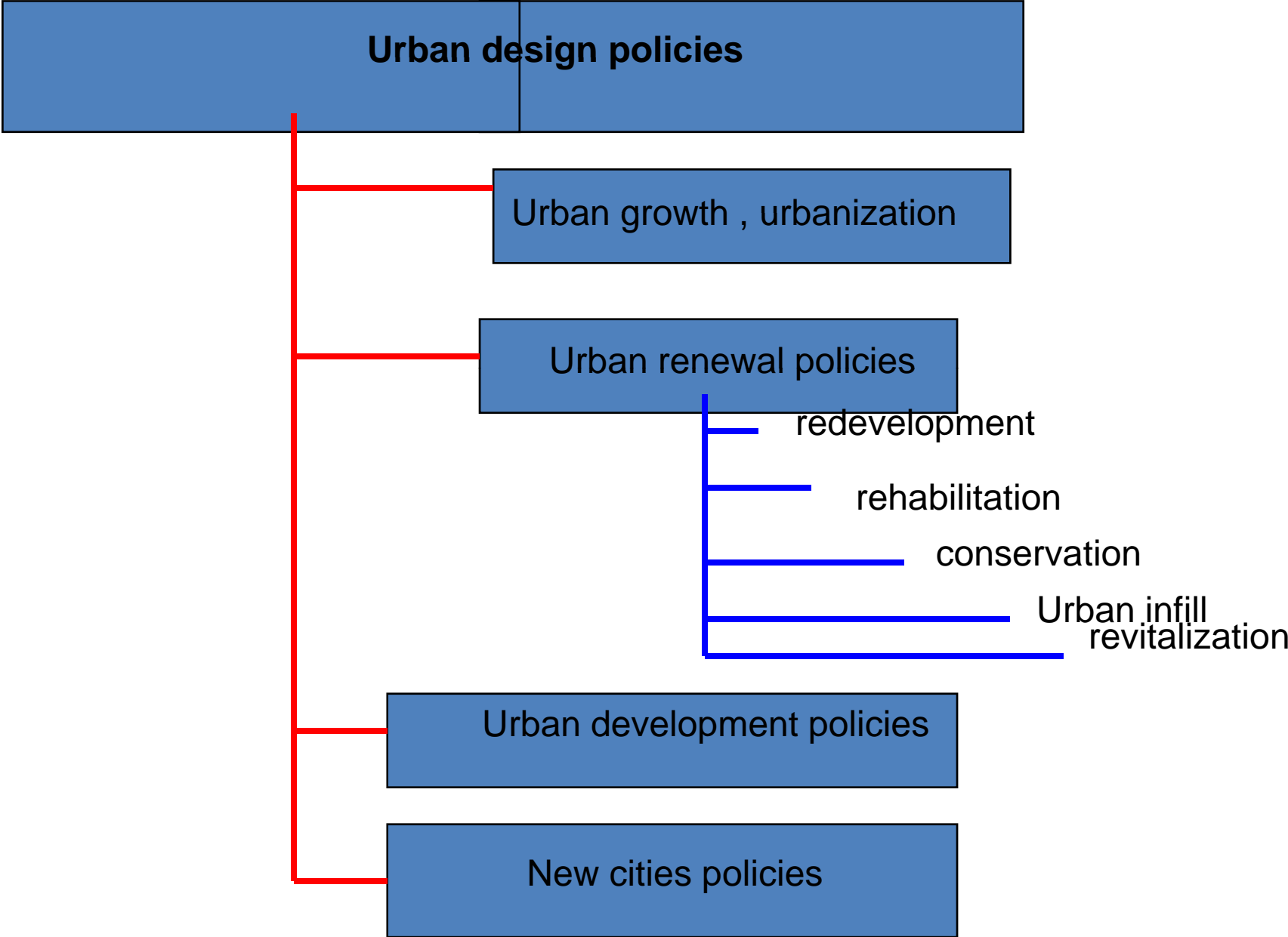
In the area from the second ring road to the high-tension line the axis is characterized through the important functions occurring on both sides; on one side the Complementary Centre in the south and on the other side the stadium, Popular Army grounds, and new administration facilities. The Complementary Centre with the petrol station, bus station and supermarket, as well as the areas with public functions, are all subject to later comprehensive design. For this reason, the design measures in the public street areas are essentially limited to a walkway and a continuous row of trees.

The walkway near the planned main administration building expands into an entry plaza, from which a pedestrian bridge leads over the urban arterial to the eastern side of the high-tension line area. This bridge should be so formed as to rise gradually so as to allow effortless access (i.e. without stairs or escalator) for pedestrians to both sides.

In the area from the high-tension line to the District Centre the Central Axis consists of a 110 meter wide band which is landscaped according to strict formal principles.

#### CONCEPTUAL DESIGN FOR THE CENTRAL AXIS





## From two dimensional to three dimensional approach

- Platform, earth, ground, base, ...
- Shape of area( regular, irregular, geometrical...)
- Area m<sup>2</sup>, km<sup>2</sup>, ...
- Dimensions of platform
- Proportion of width & length
- Topography of the ground( sloped, flat, ...
- Texture of ground. Rough , smooth, ...
- Lines of ground( horizontal, grid, hatch, directions of lines?
- Color of ground ( green, brown, monochrome, ..
- Materials of ground ( one material, different materials, wood, concrete , grass, sand, asphalt, water...

- Mass
  - Two dimensions of mass
  - Height of mass( third dimension)
  - Proportion of dimensions of mass
  - Form of mass
  - Solidity of mass,
  - Texture of surfaces,
  - Lines of surfaces , patterns, horizontality, verticality,..
  - Colors of surfaces
  - Materials,
  - Identity of mass, is it related with a certain age, culture, meaning? (pyramid, cube, vertical monuments, arch, ...

## Masses on a ground

- Masses on ground = solids and voids
- = masses and spaces
- Masses on ground define the space,
- With out masses space is infinitive, not specified
- If the masses are buildings, walls, trees, fences, .....
- So the spaces between them is public space
- The design of this public space , the relationship between masses and voids , positive and negative, is what we call it Urban design.

Urban design is concerning in finding a suitable composition of elements to create a required environment  
different compositions give different feelings  
different compositions give different meanings  
receptions , perceptions.  
different feelings encourage different behaviors  
it is urban design concern to create different public spaces for  
different purposes

# Composition

- Rhythm
- Random pattern
- Unity
- Contrast
- Centralization
- De- centralization
- Dominance
- Enclosure
- Harmony
- Monotony
- Varsity



What concrete ground of 100 100 m is to be occupied by  
number of unified masses ( solid, sandy, rough surfaces cubes)  
of 10\*10\* 10 m  
design different compositions to have the mentioned bellow  
characters.

1. Linear open spaces
2. Central static open-space
3. Compacted pattern
4. Diversity of open spaces
5. Rhythm
6. Human open space ( human scale)
7. Strange open spaces
8. Open spaces of a historical era.

A ground of 50\*70 cm (select the ground properties) is to be occupied by number of masses (select the masses properties)  
Design a three dimensional composition to emphasis a certain concept.

1. Pattern driven from historic civilization (Greek, Roman, Islamic, Gothic, renaissance, modern)
2. Pattern express an Idea of (fear, happiness, strangeness, Love, memorial of dead people, memorial of war, peace, humanity, hunger, dry seasons, globalization, era of internet and communication, tread, .....

with best thanks