

Al Azhar Engineering Eighth International Conference (AEIC2004)

THE CONTRIBUTION OF GREEN PARKS TO A BETTER QUALITY OF LIFE IN URBAN COMMUNITIES

A case study for New Cairo City

Mohamed Tamer El Khorazaty
Mohamed El Mohamady Eid – Ingy Khaled Waked

Abstract

Urban communities worldwide embrace human development activities which directly inflict a significant degradation of living conditions. For a better quality of life, urban communities should demonstrate higher levels of applying environmental, social and economic guidelines; the Triple Bottom Line of Sustainable Development. This, in terms of urban development, would imply sustainable regulatory frameworks which govern new urban communities and enhance existing ones.

This paper, first discusses the importance of green parks within urban communities as a compelling contribution to the enhancement of sustainable urban development guidelines. The authors demonstrate a specific emphasis on New Cairo City; a new urban community to the east of Cairo's urban agglomeration, where the lack of public green parks is one of the factors that contributes to the degradation of standards of living.

Based on an extensive research on major worldwide urban communities, the authors then present the statistics behind the major public green parks in several cities in different continents. The benefits of having such open green spaces are underpinned by the elevated standards of living which inhabitants of these communities benefit from. For new urban communities such as New Cairo City (NCC), which is one of the successful experiences within the new settlements program in Egypt, possessing promising future opportunities due to its high quality of development, the potential benefits of creating a central public green park are even greater. This paper presents a proposition for the creation of a new green park in NCC which would play an essential role in improving living conditions, on the three parallel levels of sustainability.

Keywords: New Cairo City, Green Parks, Sustainable Development, Case Study, Urban Communities

Introduction

There is now overwhelming evidence that human development is depleting natural capital at a faster rate than it can be replenished and is producing waste products at rates greater than global eco-systems can absorb (UNEP GEO, 2000). The consequence of operating economic systems beyond ecological limits is the destruction of the resource base and the whole-scale pollution of the life support systems upon which continued human development depends (RCEP, 2000). The 20th century saw alarm and despair over the state of planet Earth, where serious destruction has been so widespread that people have questioned whether 'nature' is dead, or was merely a construct. But 'nature' is not a thing, it is a dynamic process. If human ignore it, nature will simply outlive us. Remembering that we are part of 'nature', and that it deserves care, respect, and in some places even privacy, is probably our best last hope for survival as specie.

Sustainable Development (SD) is emerging as the solution for our current environmental degradation; SD is a dynamic process, which simultaneously protects and enhances the global ecosystem while working on three parallel levels; social, environmental and economic. It also systematically integrates vital environmental and social guidelines into economic development, financial planning and general management activities (M.E.M.EID, 2004).

With more than 300 definitions of sustainability, it is little wonder there is some ambiguity over what exactly the term means. The best-known definition comes from the World Council on Environment and Development in 1987, which defines sustainable development as that which "...meets the needs of the present without compromising the ability of future generations to meet their own needs".

On the scale of urban communities, sustainable development guidelines can be demonstrated through several key elements such as biodiversity, urban ecological footprints, and natural green spaces in urban areas as well as public parks. These can be perceived as a network of open space which provides room for human recreation, wildlife habitat, and water and energy management. Too often these functions are treated as separate and residual aspects of urban planning, or sometimes ignored altogether, but a sustainable approach to design changes that through the design of the open space network.

The reason why the authors advocate a network is that Wildlife needs ‘corridors’ to allow species diffusion and habit reinforcement, people like attractive green ‘round walks’ on the urban fingers and the linear forms of streams and rivers, hills and woods, form a natural framework for urban development.

A sustainable landscape is one where people perceive town and country to be entwined and interdependent, not the one imposed on the other. So open space network links through the town and out into the country. Positive planning for the green spaces in and around towns may sit ill traditional protection of the urban fringe with a green belt. A more subtle approach than just a green belt is called for, recognizing the varied and often competing demands on open land, establishing zones reflecting different priorities, and moving from ‘belt’ to ‘wedges’.

The research now discusses a group of case studies of several major worldwide cities and capitals to explore the benefits of embracing green parks and open space networks in new and already established urban communities.

NEW YORK

Area (sq.km.)	Population	Population Density (Person p./sq.km.)	Reference	Area of Public Parks (Hectares)	Area of Green per Person (sq.m per person)
783 (Total Core)	7 323 000 (1990)	9 352	www.demographia.com NYC.gov Home Page	11 331.3	15.47
60 (Manhattan)	459 575	7 660	NYC Department of Parks	1 040.8	22.65

Table 1: Statistics of New York

Parks in Manhattan There are 253 park parcels (1040Ha) in Manhattan, which represent 17% of the borough’s total area. The main parks are:-

Central Park (360Ha) is one of the urban wonders of the world. It is a green oasis in the great concrete, high-rise landscape of Manhattan Island, New York City. It is so naturally part of the Manhattan environment that many people may not realize it is entirely man-made. Frederick Law Olmsted and Calvert Vaux, the designers of Central Park, knew the Park would be a healthy refuge from the over-crowded living sections in southern Manhattan.

Riverside Park (131Ha) is Manhattan's most spectacular waterfront park, stretching four miles from 72nd to 158th Streets along the Hudson River. The Landscape terraces down steeply in 3 levels to a man-made shoreline and promenade, constructed 1937-1941. In addition, 134 acres and 22 modern recreational facilities have been added to the park. A vital north-south automobile artery and a railroad run in a tunnel under the entire park. Recreational facilities include handball, basketball, tennis and volleyball courts, and softball and football fields as well as a 110-slip public marina at 79th street.

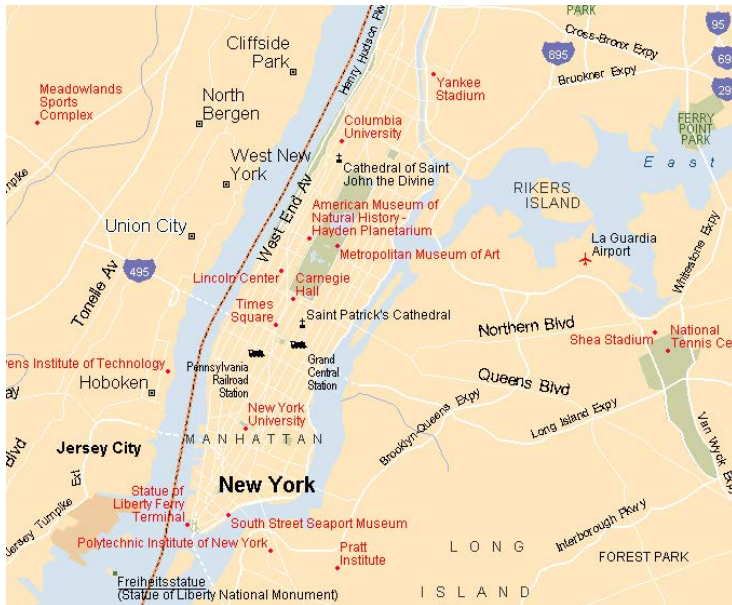


Figure 1: Map of New York showing Location of Central Park

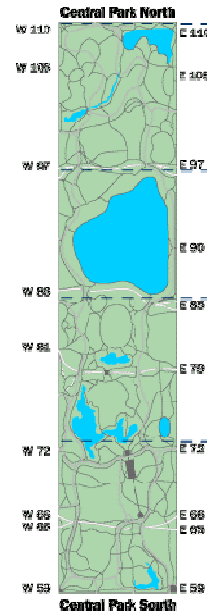


Figure 2: Layout of Central Park



Figure 3: Compilation of Views of Central Park and Riverside Park in New York

MONTREAL

Area (sq.km.)	Population	Population Density (Person p./sq.km.)	Reference	Area of Public Parks (Hectares)	Area of Green per Person (sq.m per person)
1 738 (Metropolitan)	3 400 000 (2002)	1 956	www.demographia.com	10 286	30.2
Central Area	1 016 376	-	Case Study	-	-

Table 2: Statistics of Montreal

The city of Montreal is located on the Island of Montreal, the largest in a group of islands at the confluence of St. Lawrence and Ottawa rivers. Unique to this island is the Mount Royal- 52.82 hectares- a landscaped park which overlooks the city and affords Montrealers the pleasures of jogging, cycling, picnicking, bird watching and the joys of a vast area of greenery under pleasant skies. The nearby islands in St. Lawrence River Ile Ste-Helene and Ile Notre-Dame- were the site of the Expo67 World Fair and now comprise Parc Jean-Drapeau.

Parc Jean Drapeau (61.7 ha)

The islands, on which the park is situated, are great spots for exploration on foot, bicycles or roller-blades. Ile Notre-Dame draws motor fans for the Grand Prix every June. Half of Ile Ste-Helene is taken up by *La Ronde amusement park*. The other half is home to the *Stewart Museum*.

The Montreal Botanical Garden opposite the Olympic Stadium covers 73 hectares, including Chinese and Japanese gardens. It is ranked as one of the largest of its kind in the world and is a veritable living museum of plants. To reach its objectives, Montreal Botanical Garden acts as a cultural, educational, social and scientific institution.

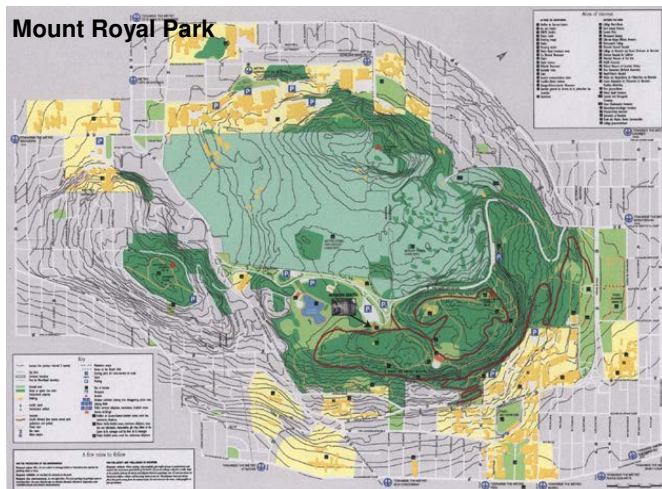


Figure 4: Layout of Mount Royal Park

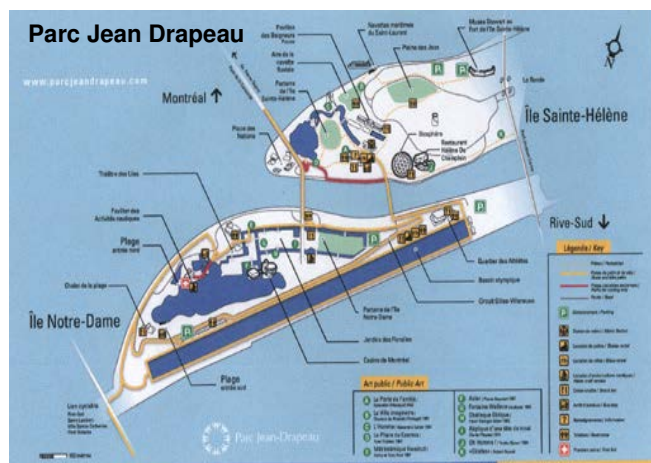


Figure 5: Layout of Parc Jean Drapeau



Figure 6: Map of Montreal Indicating the Parks



Figure 7: Compilation of views of the Parks

HONG KONG

Area (sq.km.)	Population	Population Density (Person p./sq.km.)	Reference	Area of Parks (hectares)	Area of Green per Person (sq.m per person)	Area of Green per Person (sq.m per person)
1 098.02	6 826 500	6 217	www.demographia.com			
19.92	338 300	17 000	Case Study -Central Area	125	3.7	3.7

Table 3: Statistics of Hong Kong

In 1999, the Provisional Regional Council managed more than 552 parks and gardens, including 9 major parks in the New Territories. It maintained 1,122 ha of greenery in the form of parks, gardens, sports grounds, soccer pitches, games areas and children's playgrounds. During the year, the council completed 40 landscape projects and planted about 12 000 trees, 30 000 seeding and 1.2 million flowering shrubs and annuals. There are about six major parks in the urban area of Hong Kong.

Ocean Park - (87ha) is the largest leisure paradise in Southeast Asia, built on both sides of the mountain. A cable car system links the lowland and headland sections providing views of Hong Kong and South China Sea. Over 40 major attractions include world-class features such as the Atoll Reef, Wave Cove, Shark Aquarium, Bird Paradise, the Butterfly House, and a 3 500-seat Ocean Theatre for marine mammal shows. The Middle Kingdom features a walk through 5 000 years of Chinese history, and Water World provides splashing fun during the summer.

Hong Kong Park – (8ha) opened 1991 on the site of the old Victoria Barracks, carefully folded into the contours of the surrounding hillside. Among the park's many features are lakes, artificial waterfalls, numerous plants, a visual arts centre, children's playground, restaurants, a viewing tower, a Tai-Chi garden and the outstanding museum of tea ware. The park homes 200 plant species as well as an impressive aviary replicating a tropical rainforest habitat.



Figure 8: Map of Hong Kong indicating the location of the Parks with assorted views of the actual parks.

MEXICO CITY

Area (sq.km.)	Population	Population Density (Person p./sq. km.)	Reference	Area of Parks (sq.km.)	Area of Green per Person (sq.m per person)
1 476	17 250 000	11 685	www.demographia.com		
370	4 300 000	11 685	case study	9.5	2.21

Table 4: Statistics of Mexico

Chapultepec Park (648ha) is an urban park encompassing three sections that boast many of the city's best museums and attractions. The old forest is filled with cypress trees and marks the area where the Mexican people first settled. The eastern end is marked with the Castle atop Chapulín Hill and worth a visit for the murals and monuments. Lovely paths that surround the area provide space for leisurely strolls and Sunday family outings is a popular activity. A roadway, with a charming train, is lined with colorful vendors. A fine zoo, with animals from the Americas, and a delightful lake are nearby.

Alameda Park – in central Mexico City, occupies several city blocks. Since 1541, it is the city's oldest park. It has also been an Aztec market and it was the site of burnings, hangings and executions. With its walking paths, numerous fountains and a Moorish kiosk, this park is full of, old style, traditional charm. On weekends there are salsa or rock bands playing and a puppet theatre for kids.

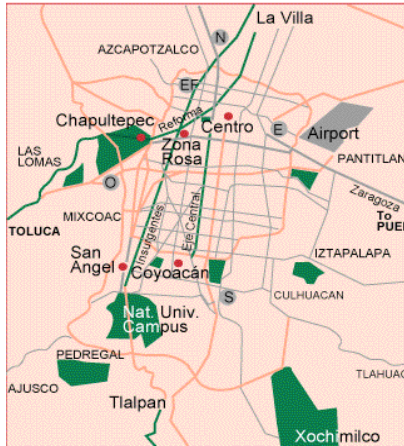


Figure 9: Map of Mexico indicating location of Chapultepec Park



Figure 10: Layout of Alameda Park

The floating gardens of Xochimilco - South of Xochimilco are more than 80km of canals, the "Floating Gardens," which operate since 700 years. They consist of two main parts: First the tourism-oriented area in the historic center of town, where colorful boats take tourists through the canals, where lively music is played. Historic buildings, restaurants, souvenir stands, and boat vendors border this area. The other section, north of the center of town, is the ecology-oriented area: Parque Natural Xochimilco.



Figure 11: Aerial views of Parks in Mexico

LONDON

Area (sq.km.)	Population	Population Density (Person p./sq.km.)	Reference	Area of Public Parks (Hectares)	Area of Green per Person (sq.m per person)
321 (Inner London)	2 761 000 (1998)	8 601	www.demographia.com	2 023.44	7.33
37.4 (Central Area)	320 664	8 574	Case Study	490.26	15.28

Table 5: Statistics of London

The Royal Parks Agency in London achieved enhancing, protecting and preserving the Parks with the minimum of resources. With an annual budget of £22 million it is responsible for 5,000 acres, 32 miles of roads, 280 buildings, statues and memorials, 49 miles of boundary walls and fencing, 21 lakes and ponds and 155 officers in the Royal Parks Constabulary.

10 Royal Parks in London: Primrose Hill, The Regent's Park, Kensington Gardens, Hyde Park, the Green Park, St James's Park, Brompton Cemetery, Bushy Park, Richmond Park, and Greenwich Park.

5 Royal Parks in Central London: (490.26Ha) Regent's, St James's, Greenwich, Kensington & Hyde Park + 80 others near Central London.

The Hyde Park became a Royal Park in 1536 (opened to the public 1630). Over the years, Hyde Park has developed a tradition of hosting both local and national events, celebrations and performances. The most famous features of the Park are:

- The Serpentine*: a lake much used for boating and swimming.
 - Serpentine Bridge*: It offers a splendid view down the Serpentine to Westminster Abbey and the Houses of Parliament.
 - Rotten Row*: the world famous riding track.
 - Pet Cemetery*: The Duke of Cambridge (1880) requested the building of this ground after the death of his wife's favorite pets.
- There are also areas planted as meadowland to encourage insect life and the ecological chains they support.



Figure 12: Layout of Hyde Park and Kensington Gardens



Figure 13: Aerial images of Central London

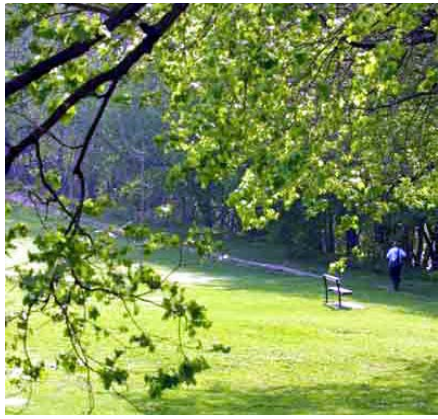


Figure 14: Assorted Views of Public and Royal Parks in London

PARIS

Area (sq.km.)	Population	Population Density (Person p./sq.km.)	Reference	Area of Public Parks (Hectares)	Area of Green per Person (sq.m per person)
2 722	9 645 000	3 543	www.demographia.com		
106 (Central Area)	2 125 000 (1999)	20 047	www.demographia.com (Case Study)	1 772.96	8.34

Table 6: Statistics of Paris

Tuileries Gardens and Jardin du Carousel (28Ha), (1564-72) is the most central park in Paris. It stretches its alleys and lawns along the Seine River from the Louvre museum to the Concorde square. These gardens are considered to be the finest former French gardens spread with basins and statues.

Champ de Mars (35.7Ha), (1765) is a beautiful park that was once military training grounds, on which the Eiffel Tower stands.

Jardin et Palais du Luxembourg (25Ha), The gardens of Luxembourg surround the palace with sprawling lawns abundant flowers and harmonious paths.

Bois de Boulogne (865Ha) in the West and Bois de Vincennes (955Ha) in the East of Inner Paris.

Parc de la Villette (55Ha), From the Porte de la Villette to the Porte de Pantin, this largest Parisian modern park mixes the daring architectural styles of Bernard Tschumi, with thematic gardens and vast green areas surrounded by blue sky and water.

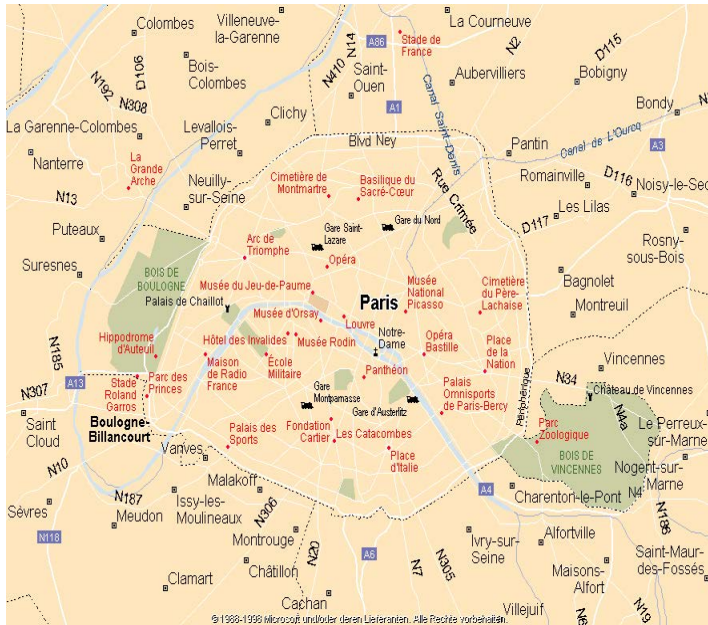


Figure 15: Map of Paris indicating the Parks in Green Plots



Figure 16: Parc de La Villette



Figure 17: Les Jardins de Versailles



Figure 18 : Image of Parc de La Villette

BERLIN

Area (sq.km.)	Population	Population Density (Person /sq.km.)	Reference	Area of Public Parks (Hectares)	Area of Green per Person (sq.m per person)
883	3 499 322	3 963	Encyclopaedia Britannica (1994)		
91.25 (Central Area)	361 623	3 963	Encarta Weltatlas 99 (Case Study)	371.19	10.26

Table 7: Statistics of Berlin

Tiergarten (300Ha) is located in the city district of Tiergarten, named after the park, it covers several hundred acres. It extends from the train station "Zoologischer Garten" -"Bahnhof Zoo"- in the West to Brandenburger Tor in the East. This large and elongated park is cut in half along its East-West axis by the street, "Straße des 17. Juni." It was here on this 60-meter wide boulevard where this year's Love Parade took place in July; over 500,000 people came to attend.

Zoologischer Garten (completed in 1841), is considered Germany's largest and most important zoo. It now has some 14000 residents representing 4000 species. In any other city center this piece of inspired architecture would look out of place, but here it manages to compliment the circus-type atmosphere of the area.

The Botanical Gardens (42Ha) offer an attractive landscape of garden beds and open parkland. The site is home to over 18,000 species of plants and includes greenhouse displays of tropical and wetland

genera. The gardens offer outdoor musical concerts that feature local and international musicians and are located in a picturesque and sheltered garden between the main greenhouses.



Figure 19: Location of Berlin’s Parks



Figure 20: Assorted Images of the different Parks

DUBAI

Area (sq.km.)	Population	Population Density (Person p./sq. km.)	Reference	Area of Green Spaces (Hectares)	Area of Green per Person (sq.m per person)
3 885	862 387 (2000)	222	news.awse.com 27-Aug-2001	420	4.87
3 885	1 029 000 (2002)	265		460	4.47

Table 8: Statistics of Dubai

Dubai’s Greenery has increased by 20.5% over the past three years, with nearly 4.600.000 sq.m of landscaping done at the end of 2000. Total green area in Dubai in 1998 was 3.800.000 sq.m, which rose to 4.200.000 sq.m in 1999. The civic body’s plan aims at turning 8% of Dubai’s land into green areas. The number of trees and shrubs planted in various parts of the Emirate also rose during the period under review. More than 2.200.000 trees and shrubs, including 25.000 palm trees, were planted in Dubai. Pant fences were set up; covering an area of over 207,000m. 40 major projects were undertaken by the department in 2000.

Al Mamzar Park (106Ha) is located approximately 5 km after the turn off to Hamriya Port. It offers barbecue sites, chalets for hire, swimming pools, a beach, a lagoon; and children’s play areas. Piped music is played throughout the day.

Jumeirah Beach Corniche is a promenade of 800m of beach frontage, with shaded picnic tables, many children’s playing areas, and sheltered swimming area.

Zabeel Park (51Ha) is set up for Dh180 million at the existing Zabeel square will get extensive sports and recreation facilities expected to be ready by August 2003.



Figure 21: Layout of Al Mamzar Park

Figure 22: Images of the different Parks

AMMAN

Queen Rania Al Abdullah's Gardens is one of Amman's new park projects, located in the "Hay Al Nuwara" area. The featured project aims to increase the level of development in Jordan from a socioeconomic prospective. The Project features:-

- The Administrative Building (327 sq.m)
- Center for Women's Development Projects (380 sq.m.)
- Health Center (380 sq.m)
- Children's Cultural Center (380 sq.m)

Gardens and outside areas (64 acres) include Football, Basketball, Tennis fields, fountains and waterfalls, as well as wooden and stone seating areas.

AL-Hussein Parks represent one of the eyewitnesses on civilization founded by his majesty King Abdullah the Second bin AL-Hussein. AL-Hussein parks are considered to be a unique challenge to creating cultural and recreational centers for Amman, and commemorating the memory of his late Majesty King AL-Hussein, and to create an open space for the citizens to be a cultural heritage and history.

Al Hussein Parks

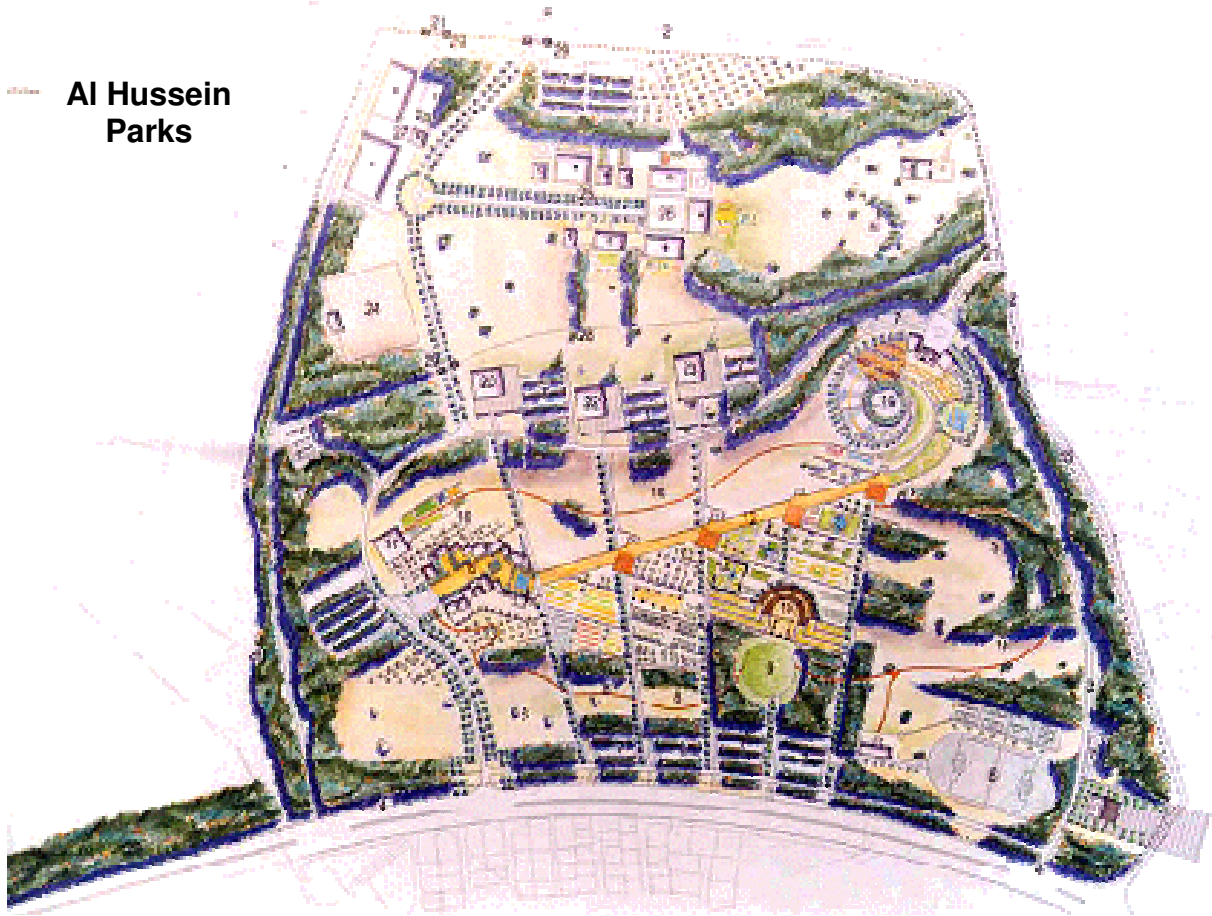


Figure 23: Layout of Al Hussein Park in Amman

UNDP Project: The rehabilitation of Amman's oldest disposal site in Marka established a local community development center in a poor, polluted suburb of Amman. In the first stage, 50,000 sq.m out of the total surface area of 173,000 sq.m were rehabilitated. The land was leveled; the soil tested and topographical maps prepared. Retaining walls were constructed, the site fenced, top-soil brought to the site and 6000 forest trees of varieties that tolerate the conditions in the area planted, in addition to 500 olive trees to be used for soap production later.

AL JUBAYL

Located on the shores of the Arabia Gulf and in center of Saudi Arabia major oil producing region, Al Jubayl, the largest of the Kingdom's new cities, is a major cornerstone of the Kingdom's economic development program.

The Master plan for Al Jubayl includes 1030 sq.km of 8 residential areas which are bounded by green, open space corridors. Each district comprises several residential sections with a population of 2500 and each with their own mosque, elementary school, shopping and recreational facilities.

Stretching over 30 km along the Arabian Gulf just north of old Jubayl, a project site is vast and impressive, with an ultimate site development potential of 35.000 to over 75.000 hectares. The industrial and permanent residential areas alone are planned to have over 5.000 hectares each.

1600 hectares of green areas, 250,000 trees and 40,000 palm trees have been planted until 1999. These encompass verdant sites, playgrounds and facilities for water sports, and are set among abundant trees and rare plants.

Economic and Ecologic Planting Systems: The surrounding Jubayl is an area stabilized by planting to prevent encroachment by sand and to reduce the dust nuisance to industrial installations. The Royal Commission, in an effort to minimize water consumption, introduced a range of salt tolerant plants.

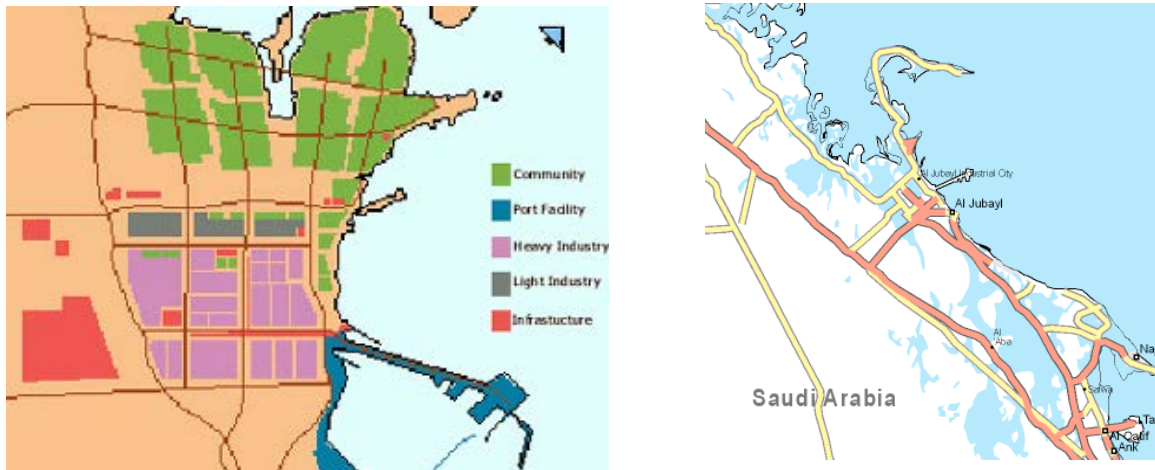


Figure 24: Maps indicating Al Jubayl within Saudi Arabia as well as Al Jubayl Urban Structure

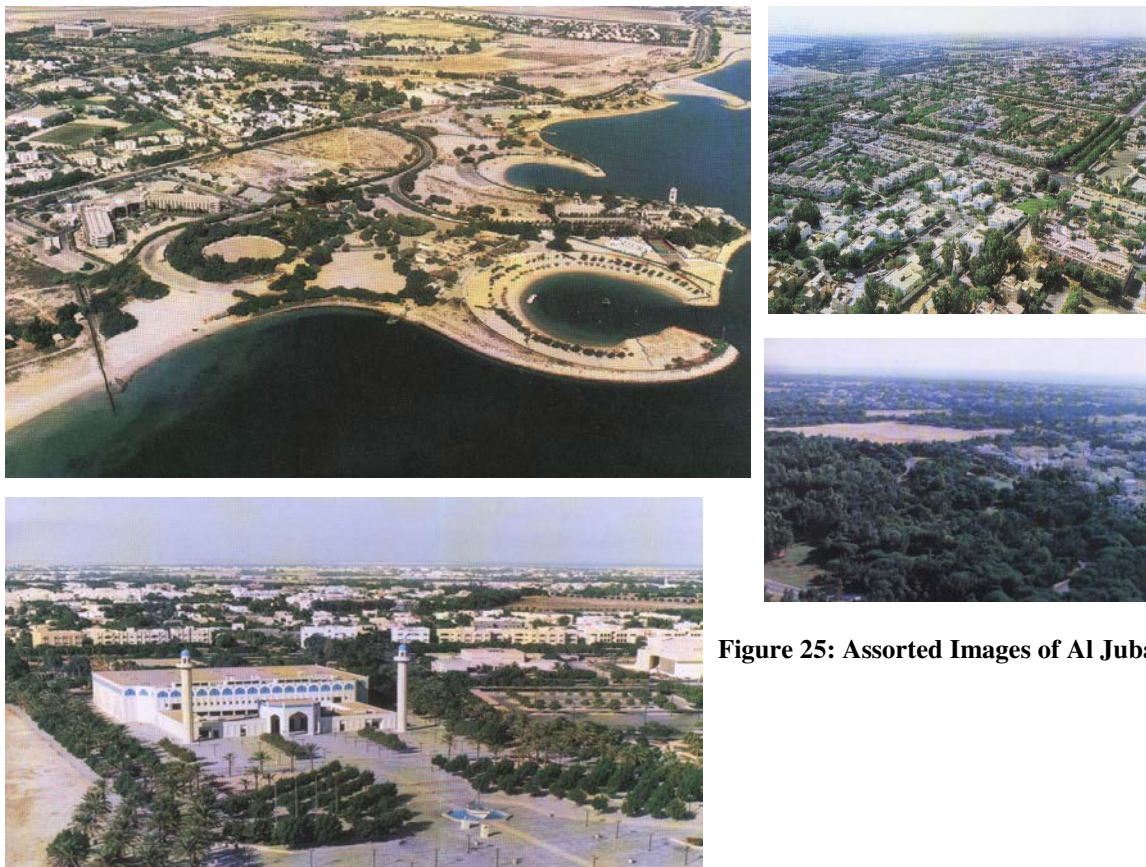


Figure 25: Assorted Images of Al Jubayl

RABAT

The capital of Morocco, Rabat is famous for its gardens and parks. The city combines peace, beauty and serenity. The gardens of Rabat-Salé, planted with flora from all corners of the world, are criss-crossed by a labyrinth of pathways and footbridges in a truly exotic setting.

The Kasbah's Andalusian Gardens are a joy although the name is slightly deceptive. The gardens were actually planted by the French in the 20th century. Wide walkways negotiate the grounds and linger beside aromatic beds filled with herbs, swathes of flowers and towering plumes of leafy trees. The gardens are popular with the female population of Rabat who congregate here to talk and pass a restful hour.



Figure 26: Map of Morocco with a detailed image indicating the general planning scheme of Rabat



Figure 27: Compilation of Images demonstrating the Moroccan Style

TUNIS

The surface of the lake of Tunis, the capital of Tunisia, covers approximately 800 ha. It spreads in a semicircular arch across El Aouina and Khereddine on the one hand and on the other hand Khereddine La Goulette. It has a key position between the center of Tunis and the Northern suburbs; this represents a strategic site as regards the spatial organization of the capital. The area of nature and parks in this project is 2 965 281 sq.m which represents 2.9% of the total area, in addition the public spaces represent 3.42% of the total area of the project.

The future agglomeration will be composed of:

- A poly-functional town center associating housing, trade, offices, and Touristic activities.
- A business district associating public utilities (education, health centers, cultural centers; sports grounds, etc.)
- Districts of collective housing, semi-collective housing, and a garden city along the lakefront.
- A central park as part of an urban park, an animation park, golf courses and zones of non-polluting activities are related to the town center.



Figure 28: Assorted Images of Tunis Parks and general style

NEW CAIRO STUDIES

New Cairo City is one of the successful experiences within the new settlements program, possessing promising future opportunities due to the high quality of development.

- Lying on the eastern arch of Cairo, New Cairo is the closest new city to the Capital.
- Located 5 km away from Nasr City, 14 km from Maadi; it is linked to main cities via several highways.
- New Cairo's total area is 224 sq.km constituting the 1st, 3rd and 5th compounds.
- The areas surrounding these compounds were urbanized and developed into small residential communities.
- A main avenue was developed as an extension to Nasr City service avenue.
- Located 350 m above sea level, the city enjoys a moderate climate throughout the year.
- It is designed to accommodate 1.5 million residents in phase one and another one million upon its completion.

Road System:-

- New Cairo city is connected to Cairo districts via different main roads; 3 entrances on the Cairo-Suez desert road, 4 entrances on the Cairo-Ain Sokhna Road and 5 entrances on the Ring Road.
- The city is endowed with an excellent internal road network that facilitates transportation. The network is 696 km long, expandable to 1074 km within 5 years.
- The road network has been designed in the form of avenues that intersect with the entrances and exits of the main districts and neighborhoods.
- The street widths start from a grid of 24m to 18m wide, and the roads that separate districts are 36m wide.

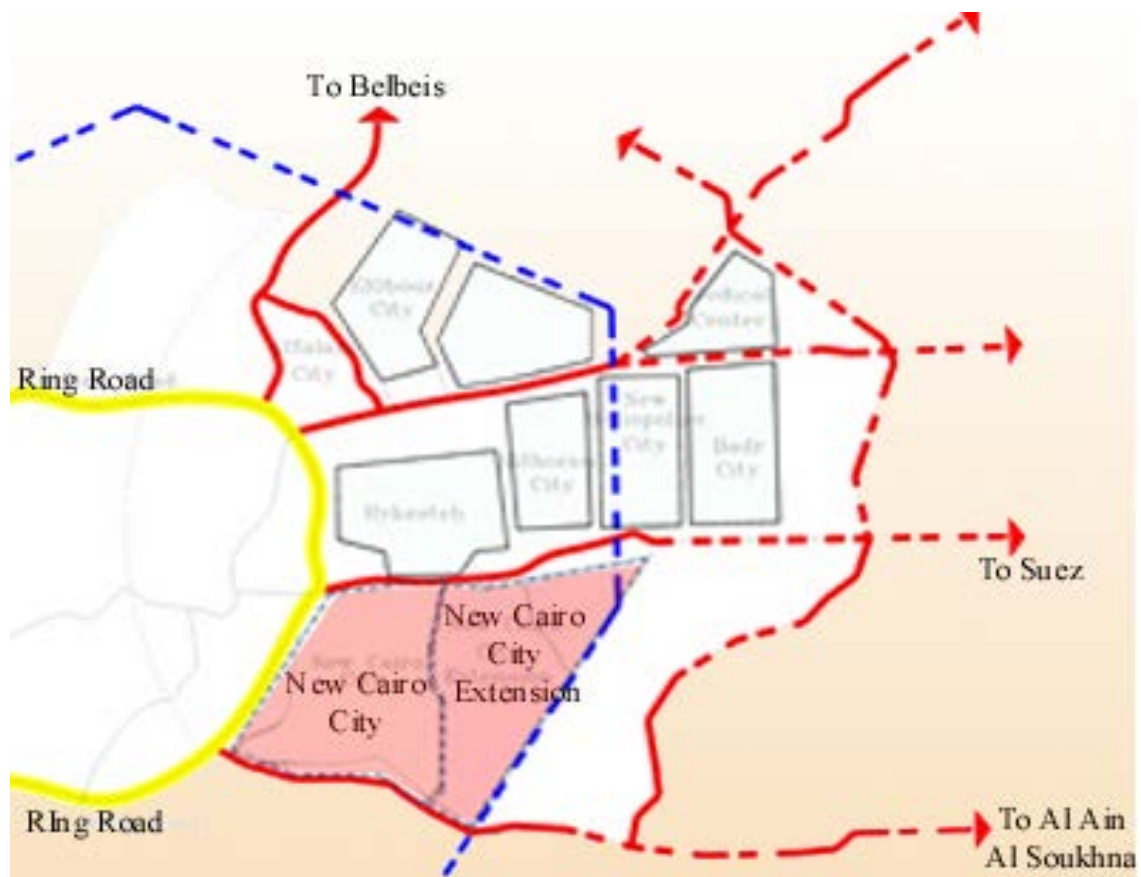


Figure 29: Road System of New Cairo City

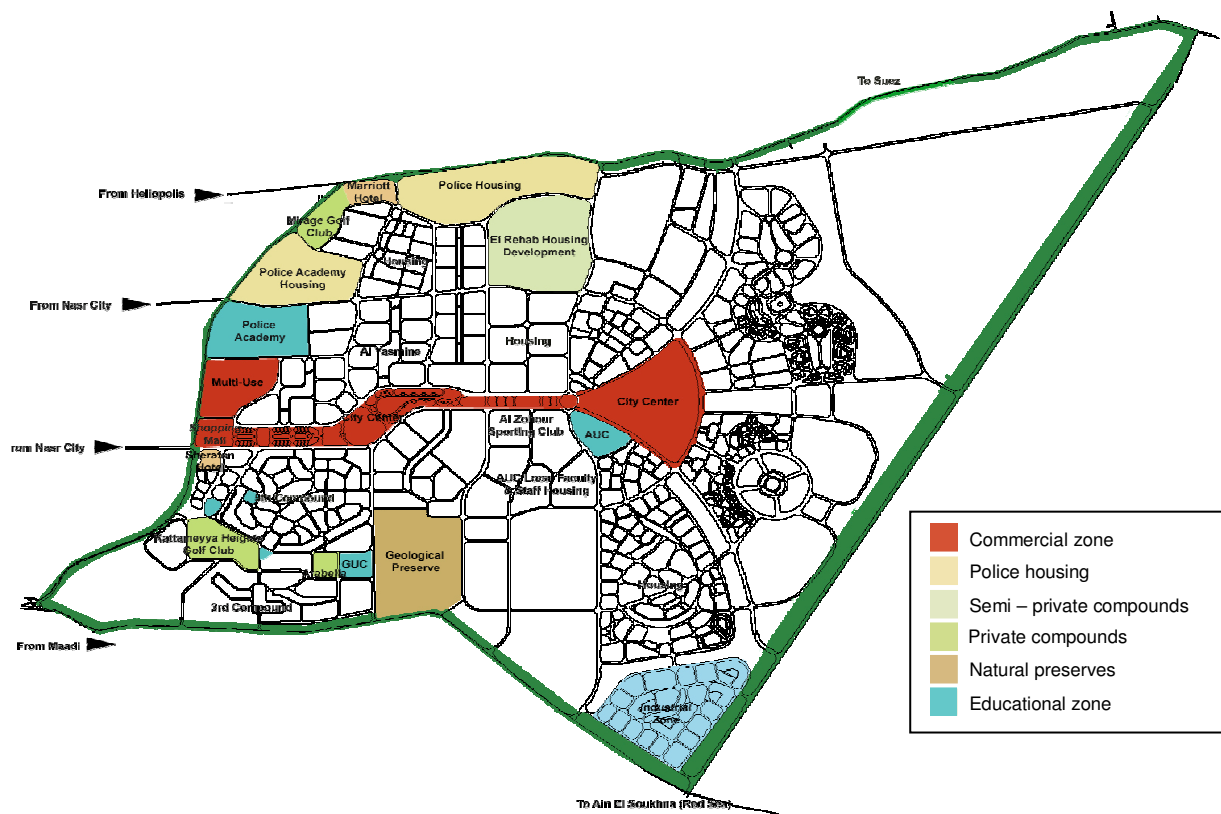


Figure 30: Layout of New Cairo City indicating the different Land Use

Land Use

Total Area = 224 sq.km

Urbanized Area = 116 sq.km

The City Center (46210 Ha) extends from the city's main entrance at the Ring Road, through the 5th Compound until it reaches the extension zone. The area accommodates a number of hotels, malls, parks, medical centers, hospitals, city hall, public service centers, and governmental affairs.

The Northern Sector (1st Compound) constitutes about half of the area of the city.

- It lies on the Northern side close to the entrance on the Cairo-Suez Road. It consists of neighborhoods and residential districts erected by the Authority of Urban Communities and the Mobarak Project for Youth Housing.
- In the West lie Mirage Golf City, Ministry of Finance land lots, and Police Academy.
- In the East and the middle are Al Banafseg, Al Yasmine and Panse areas, which are divided into 16000 small land lots of villas. The total average land size is 600 sq.m
- Also in the East, lies the investors' land areas. These are large land areas sold to real estate investors to erect luxurious residential communities.

The Southern Sector (3rd and 5th Compounds) take up about half of the area of the city.

- The 3rd Compound includes Mobarak Youth Housing units, while the 5th Compound includes 5 residential districts segmented into the different housing levels.
- Nargis District, on the East, is divided into land areas allocated for building villas.
- Also on the East, bigger areas of land are sold to real estate investment companies to build luxurious compounds.
- The Fossilized Forest Reserve lies on a big land lot to the South.

	New York	Montreal	London	Paris	Berlin	Dubai	Hong Kong	Mexico	Cairo
Area (sq.km.)	8 684	1 738	4 144	2 722	883	35	1 098.02	1 476	427
Population	17 800 000	3 216 000	12 232 000	9 645 000	3 500 000	862 387	6 826 500	17 250 000	9 900 000
Area of Green (sq.m)/ Person	15.47	30.2	7.33	8.34	10.26	4.87	3.7	2.21	0.89

Table 9: Comparison of Statistics between the Major Cities

Greenery in New Cairo

- New Cairo accommodates different recreational facilities, a number of public open spaces, and vast green (private or semi private) green areas, which are not integrated with each other.
- 17.26% of the extension zone is planned as regional services and green areas.
- The green belt (in the East) and the Geological Preserve (in the South) occupy 1134.2 ha.
- Most of the green areas are private or semi private as they belong to closed communities.
- Existing public green areas are approximately 4% of total area (private green is not included).



Figure 31: Indication of Green Spaces already existing in New Cairo City

Network of Green Spaces

The authors suggest the creation of an overall open-space-network to strengthen and define the urban form and character of the city, increase the contribution to human well-being and ecosystems, and minimize stress on people and ecosystems.

In order to help New Cairo to act as a metropolitan Center and adapt principles of sustainability, several actions are suggested:

- Creating a network of green spaces
- Promoting biodiversity.
- Implementing recycling principles.

This results in:

- Attaining a healthy environment.
- Achieving social equity.
- Seeking maximum efficiency.

Proposal for a Network of green spaces in Cairo

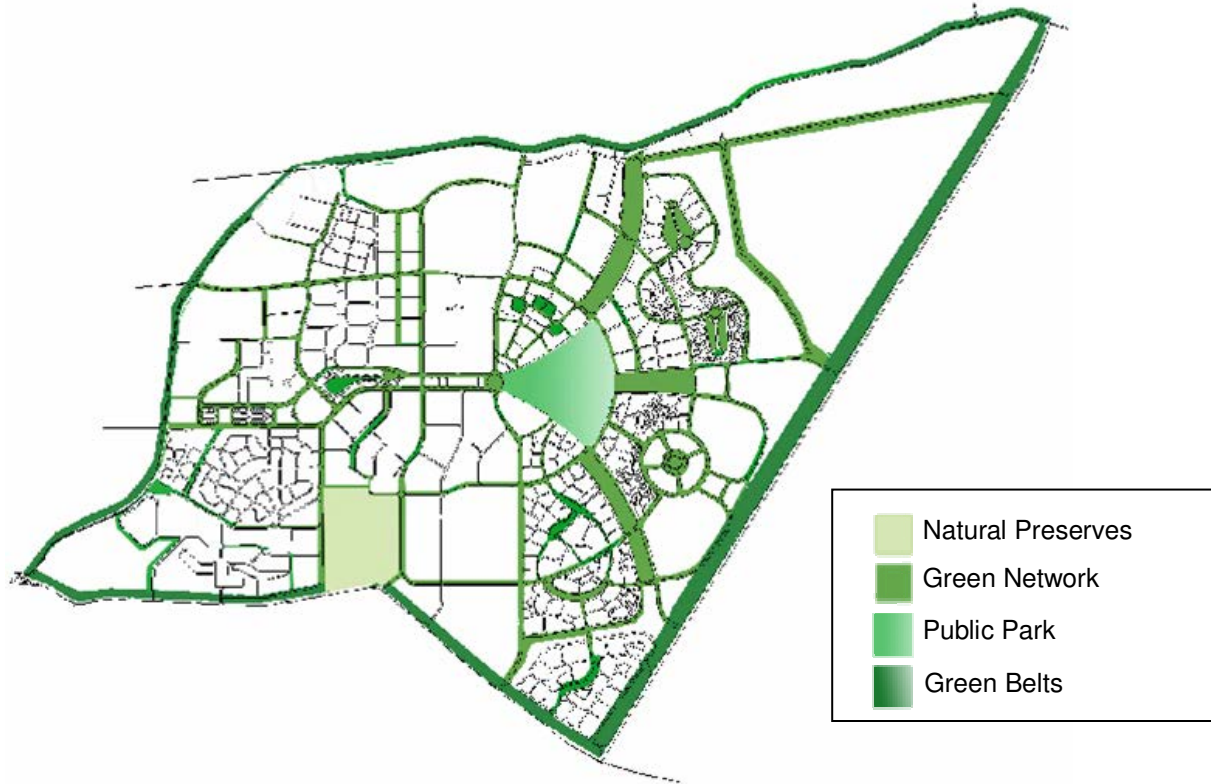


Figure 32: Proposal for a Network of Green Spaces in New Cairo City

Area (sq.km)	Population	Population Density (person p./sq.km)	Reference	Area of Existing Public Green (hectares)	Reference	Area of Green per Person (sq.km p./person)	Area of Public Green including New Park & Green Network (hectares)	Area of Green per Person (sq.km p./person)
224	2 500 000	11 161	www.misrcities.com	896	Existing green is 4% of total area	3.58	1 785	7.14

Table 10: Statistics for New Cairo City

New Cairo Park

This paper is in reference to a site, which has an area of 508 hectares (5.08 sq.km) located in the heart of New Cairo city center. The authors propose the creation of a public park on this significant location within the city that could provide various activities, and is accessible to a large number of residents.

The center of New Cairo (462.1 sq.km) is originally planned to accommodate a number of hotels, malls, parks, medical centers, and other public services. New Cairo Park lies in the extension zone at the end of the city's main spine, which extends from the city's main entrance at the Ring Road through the 5th Compound, and is surrounded by large scale projects.

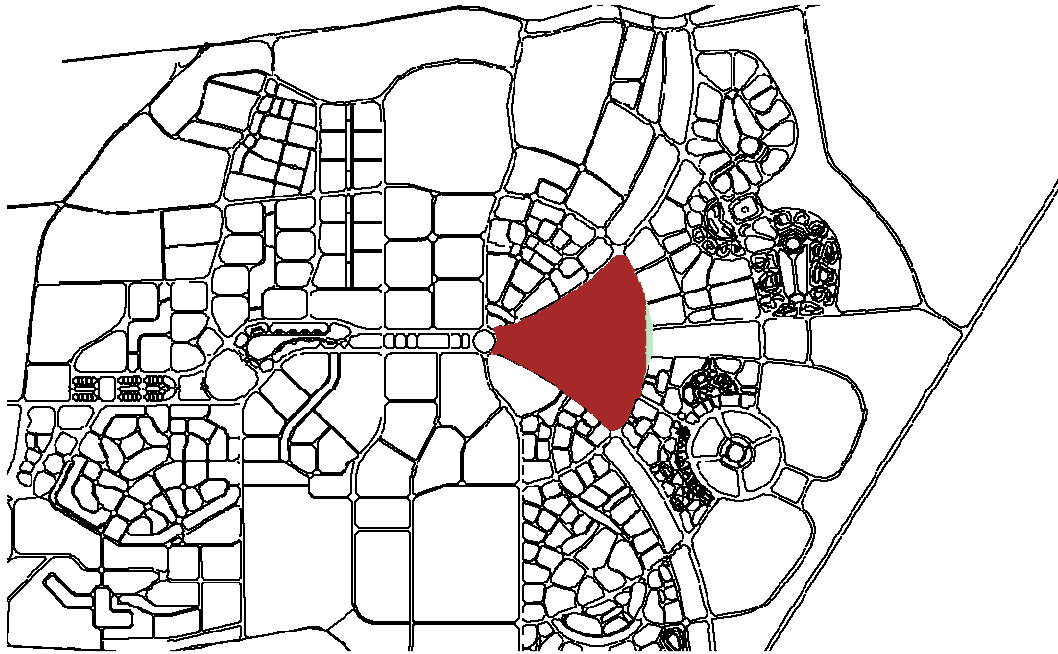


Figure 33: Layout of the City highlighting the proposed location for New Cairo Park

Suggested Park Activities:

Cultural Complex comprising a museum, a theater, cinemas, exhibition halls, conference and meeting facilities, a multi-media production center, as well as gift shops, restaurants and cafeterias. The installations include a handicrafts program for developing and enhancing artistic talents.

Science Museum comprising the most recent scientific, technological developments exhibited in an interactive, user-friendly way.

Environment and Ecology School set within a healthy entourage and aiming at spreading environmental awareness. Attached is an institute for research work related to energy sources complying with the environment.

Family and Youth Center set within a network of open spaces. The center involves programs in health education, handcraft training, social services, arts, humanities, and recreational activities.

Hotels located in a vast landscaped area, sharing a perfect climate and sensational scenery. The hotels offer high quality accommodations and services in a comfortable atmosphere designed for both business and leisure guests.

Sporting Club including facilities such as clubhouse, swimming pools, tennis courts, athletic areas, and children play areas.

Horse Riding Facilities comprising polo, horse racing, riding schools offering lessons for all standards of riders, horse breeding, in addition to occasional horse festivals.

Children Playgrounds are located throughout the major urban areas and public parks. They offer children open spaces for play, a world of adventure, as well as fun and activity in a safe and creative environment.

Miniature Zoo offering recreational and educational activities, the conservation of wildlife, and the discovery of biological knowledge. Through exhibits and collections of desert animals and plant species, the zoo provides grounds for interaction between people and the different elements of the natural environment.

Botanical Gardens and Plants Nursery constituting plant collections such as herbs, native plants, roses, as well as thousands of shrubs and trees, suitable for the surrounding environment. Furthermore, a research center is suggested in order to document and preserve the plant biodiversity.

All the above-mentioned activities are linked together by a large open space that comprises shading elements, arcades, kiosks, fountains, landscape furniture and lighting elements.

CONCLUSION

This paper establishes a strong case for the creation of a Green Park in New Cairo City. This was demonstrated through the examination of the impact of Parks in major world capitals and cities. The statistical analysis presented in this research discusses the high standard of quality of life which the inhabitants of the mentioned cities benefit from due to the urban integration of these parks in their community life.

For New Cairo City, the challenge is to maintain the strong potential which already exists within the city explained in this paper and in fact enhance this potential to embrace a green park in the center as proposed. This would underpin the sustainable agenda suggested for the city where introducing the green park would improve the quality of life for the city's inhabitants on the three level of sustainability. On the environmental level, the green park triggers a new era for the protection of the environment and enhancing the living conditions. On the social level, the park would embrace the community and allow an additional social dimension to be practiced within the urban boundaries of the community and finally, on the economic level, the suggested green park would be a clear demonstration of the business case for developing new job opportunities, adding new businesses and elevating the economic value of the urban community.

The contribution of the proposed green park is directly linked to a better quality of life for the inhabitants of New Cairo City, it's an opportunity to catch up with the global sustainability agenda and demonstrate a fine example for ameliorating the quality of life in a city which already represents a strong potential for a fully developed new urban community.

References

- Elkington, J. 1999. *Cannibals with Forks; The Triple Bottom Line of 21st Century Business*, Oxford: Capstone Publishing.
- Eid, M.E.M, 2004, *Rethinking Relationships in the Construction Industry; Integrating Sustainable Development into Project Management Processes*, PhD Thesis, University of Edinburgh.
- Royal Commission on Environmental Pollution. 2000, *Energy - the Changing Climate*, London: RCEP.
- United Nations Environmental Programme. 2000, *Global Environmental Outlook 2000*, Nairobi: UNEP GEO.
- World Business Council for Sustainable Development (WBCSD) 1997, *Signals of Change*, WBCSD: Website <http://www.wbcd.ch/publications/signals.htm>.
- World Commission on Environment and Development, 1987, *Our Common Future; The Brundtland Report*, UN, World Commission on Environment and Development.

Electronic References

- www.misrcities.com
- www.news.awse.com
- www.demographia.com
- www.nyc.gov (Department of Parks)
- www.eeaa.gov.eg (Egyptian Environmental Affairs Agency)