Enriching the Legacy of Athens' 2004 Olympic Village: The Role of Information Technology Infrastructure

by

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Abstract

The year is 2004. Athens, the capital of Greece is hosting the Olympic Games for the first time in 108 years. Athens, to accommodate the needs of the XXVIII Olympiad, has altered the form of the city through major infrastructure projects. The Olympic Village, as one of these projects, is a place with significant information infrastructure and transformation capabilities that will contribute to the future development of Athens.

In this thesis, I examine the post-Olympic development of Athens' Olympic Village. Although the Greek government has decided that the Village will be used for housing, I believe that other forms of development should be explored. Under the hypothesis that the presence of information technology infrastructure provides a unique opportunity for post-Olympic development, this thesis proposes an alternative solution for the Village's future development.

Through research on the experience of previous Olympic Villages, presentation of the current situation of the Athens Olympic Village, and evaluation of the role of information technology infrastructure on urban structures, I propose an alternative post-Olympic development for the Village; a proposal that not only values the Village's role in the surrounding community but also the potential of the Village to become a major technology center which will aid the future development of Athens.

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Co-Advisor/Reader:	Michael J. Shiffer Lecturer and Principal Research Scientist Department of Urban Studies and Planning
Reader:	Eran Ben-Joseph Assistant Professor of Landscape Architecture and Planning Department of Urban Studies and Planning

Acknowledgements

"Culture is the habit of being satisfied with the best and knowing why"
Henry Van Dyke

I have had the good fortune of experiencing different cultures that have added enormous value to my search for excellence. This search has helped me build a philosophy in which the core values are the human actions and virtues. I chose to research the Olympic Villages in this thesis because it is not only a subject that supports my academic interests, but because it also offered me the opportunity to study, research and reveal fundamental spiritual values and virtues that have existed in human culture since the dawn of civilization.

I am forever grateful to all the people, inside and outside of academia, who have been a continuous inspiration in my pursuit and establishment of an advanced culture. I am particularly grateful to my thesis advisor, J. Mark Schuster and my academic advisor Michael J. Shiffer for their support and guidance throughout this project. Mark, although he agreed to advise this thesis relatively late in the process, contributed much to its methodology and reasoning as well as to its final success. Michael, who advised and supported my decisions and insights throughout this portion of my academic career, not only helped me to organize and complete this thesis but also ensured its success from the beginning. It has been both a pleasure and honor to work with them. I am also thankful to Professors Eran Ben-Joseph, Dennis Frenchman and Klaus R. Kunzmann, with whom I had the honor to work closely in exciting projects during my studies, and for reading, advising and supporting this thesis.

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I. Introduction

In 2004, Athens, the capital of Greece, will host the XXVIII Olympiad. This will be the first time that the Games have returned to Athens in 108 years. To meet the requirements of this international event Athens is investing in major infrastructure projects as well as in urban design renovations that will allow the city to conduct the games successfully and to promote its international image.

Besides major infrastructure projects such as the new international airport and improvements to the subway and highways, Athens is investing in its cultural heritage by renovating and restoring archeological and historical sites, monuments and classical buildings and is constructing a system of parks and pedestrian ways that will connect all the major archeological sites and monuments. Athens already has 75% of the required athletic facilities ready and is about to build the Olympic Village.

The information infrastructure of the city has already been renovated with digital telecommunication centers, satellite telephony and television, and Internet networks. These will be extended to all the athletic facilities as well as to the Olympic Village for media coverage of the events as well as to provide communication amenities to the participants and for the use of the future Village inhabitants.

The Concept

The Olympic Village is an important element of the Olympic facilities because it is a place where people live together, a place for cultural exchange, and a place where athletes train throughout the games.

Throughout its history, the Olympic Village, as a specific urban element, has functioned not only as a necessary Olympic facility but also as a study-model for ideas on how to develop, how to plan, and how to manage the city. The role of the modern Olympic Village, which emerged in the beginning of the century, was primarily to accommodate the needs of athletes and participants in the Games. As the Games grew and their character became international, the Olympic Village grew with them,

simultaneously changing from a temporary housing solution to a permanent urban development.

The design and development of the recent Olympic Villages has been focused on what will happen to the Village after the Games. This is for two reasons: the first financial and the second the development of the host city.

First, the cost of developing a Village that will meet all the requirements and guidelines of the International Olympic Committee (IOC) and at the same time be an efficient solution and a point of interest for both the participants and the visitors is always significant. In order for the investment to be made by the host city it is necessary to develop a solution that will realize the maximum return.

Second, the planning and design of a Village offers enhancement of the character and the development of the host city. After the Games that enhanced image should be kept alive in order to draw the most benefit from the investment. As we will see in the next chapter, various models have developed through the evolution of the Villages that have ensured the legacy, in one form or another, of the Olympic Villages. The most common post-Olympic development of the previous Villages has been housing. This is a successful model, but one which I will challenge in light of Athens' unique situation.

In Athens, the Organizing Committee for the Games is already in the process of finalizing their plans for the 2004 Olympic Village. Embedded in this process, as with all Villages since the 1960's, is a discussion of the future of the Village. The Committee has already determined that the developer and manager of the Village will be the Workers' Housing Organization. The Organization's primary scenario for the post-Olympic use of the Village is housing (OCOG Athens 2004, 1999).

Although the housing solutions implemented in the previous Villages have been quite successful, I believe that the Athens Village, as a project in the beginning of a new era and a new millennium, should explore alternative solutions that would better promote the growth of the city at an international level. While housing is a proven end, new technological innovations and Athens' unique urban form and situation suggest that other uses may better serve its future development. In my suggestions I will argue that a technology center would best meet this goal.

When the Olympic Games become part of a city's history, thereafter the city has a unique identity and special characteristics directly related to the culture of the Games. Today, the obvious goal of cities competing to host the Games is the desire to promote their international image and attract worldwide attention. During the biding process the candidate cities include in their proposals major infrastructure projects and urban renovation proposals in order to prove their readiness and ability to undertake international challenges. Athens was chosen as the host city for the 2004 Olympics because it promoted not only its historical significance and cultural heritage but also its effort to become an important international metropolis.

The basic concept of this thesis is to explore an alternative scenario for the post-Olympic development of the Village that will, on the one hand, promote the Village as an international point of interest and, on the other hand, help Athens to maintain and develop the international character that it has achieved so far.

A Hypothesis

We are living in a modern digital world. We experience the phenomenon of the Internet through our everyday life, which is increasingly dependent on the use of technology. The rapid evolution of technology in the last decade made us realize that we are entering a new era in which digital information will influence and alter everything that surrounds us, from the way we are living to the way we are thinking.

Because of the fast way things are changing as well as the young history of this technological revolution, we have not yet been able to study and research in depth the consequences of this change. Consider the Internet. Seven years ago it existed as a pilot project in labs. Today it controls major aspects of the modern way of life and forces us talk about e-economy, e-commerce and e-education by e-mail.

The hypothesis of this thesis is that the presence of high-level information technologies in the Olympic Village is what will distinguish it from other parts of Athens and from most previous Olympic Villages. Therefore, the presence of Information Technologies will provide new and unique opportunities for post-Olympic development. This thesis will explore what these opportunities are.

Outline of Discussion

Chapter II, "The Previous Experience" presents the historic evolution of Olympic Villages from the first Olympic Village in ancient Greece to the latest Village in Atlanta built for the 1996 Olympic Games. With a more detailed presentation of the Olympic Villages of the '90s, the chapter describes the different models that have evolved in the Villages' development process. The chapter concludes by summarizing the legacy of the Olympic Villages.

The Athens' 2004 Olympic Village is presented in Chapter III. The presentation of the proposal and master plans, and a discussion of the participants in the development process are accompanied by a presentation of different viewpoints of the current plans for post-Olympic development of the Village. The information technology infrastructure of the Village is presented here as well.

The last chapter of this thesis presents an alternative scenario for post-Olympic development that could enrich the evolving legacy of all the Olympic Villages and the development of Athens. The chapter ends with a discussion of the findings of this thesis.

II. Previous Experience

Historic Evolution of the Olympic Villages

From the conceptual point of view, the Olympic Village is the only place where the Olympic maxim "the most important thing is to take part" really takes on its full meaning. Both Anita De Frantz, Olympic Winner and Vice-President of the International Olympic Committee (IOC), and Josep Miquel Abad, former Chief Executive of the Barcelona Olympic Committee (COOB '92), have described the role and the character of the Olympic Village as an effective, fraternal cohabitation in an international environment beyond race, religion, and sex and above all, competition.

The Primordial Olympic Village

Everybody knows a lot about Olympia[1] and the Olympic Games, but very few are aware that the patron and organizer of the games was the city of Elis, the capital of Elea, on the western part of the Peloponnes, some sixty kilometers to the North of Olympia. The city of Elis, assumed the patronage of the sanctuary of Olympia as early as the 11th century BC (Yalouris, N. 1976).

According to the work of Pausanias[2] (*Description of Greece*, Books 5,6) the Games were first established in Olympia by Hercules[3] when he challenged his brothers, as a game, to a running race and crowned the winner with a branch of wild olive. The reorganization of the Games in 776 BC was an initiative of Iphitus, the King of Elis, and the Elean authorities. As described by Pausanias, at that time Greece was grievously worn by internal strife and plague, and it occurred to Iphitus to ask the God at Delphi for deliverance from the evils. The answer of Pythia, the high priestess of the oracle, was that Iphitus and the Eleans should renew the Olympic Games.

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[1] Complete online source: Perseus Project, Tufts University. <http://www.perseus.tufts.edu>

[2] Historian, 115-180 AD. His book *Description of Greece* includes the most evidence about the history and establishment of the Olympic Games.

[3] Hercules, the son of Zeus and one of the most worshiped heroes, was the symbol of fortitude, valor and endurance. He subdued wild beasts and monstrous men, subjugating thus the unreasoning and chaotic forces of untamed nature to the law and will of the Gods and of society. After the end of his labors, which he performed for the shake of man, he was received on Olympus, the realm of Gods. As a mythology

Iphitus announced the Games as the will of the Gods and, in collaboration with Lycurgus, king and lawgiver of Sparta, declared Elea "sacred to Zeus" and established the Truce among the Greek cities. The Truce included two major decisions that everyone had to respect. The first decision declared that any armed person who crossed into Elea at any time and who did not leave his weaponry at the border was accursed. The second decision declared that all hostility and war between the Greek cities must cease for the duration of the Games. Also during the Truce no death penalty could be carried out.

The city of Elis reorganized the Games, introducing a new meaning to athletics by making them accessible to all citizens of the Greek cities and no longer only to aristocrats as had been the case for contests during the Mycenaean period. Inspired by Hercules and following the advice of the oracle in Delphi, the Games were a contest of honor, where the prize of victory was no longer precious goods, livestock or money but the plain and humble wreath, made from the branches of the wild olive tree (kotinos). Indeed, the first Olympionikes (Olympic winner) in 776 BC was Elean Koroilos, not an aristocrat but a simple cook.

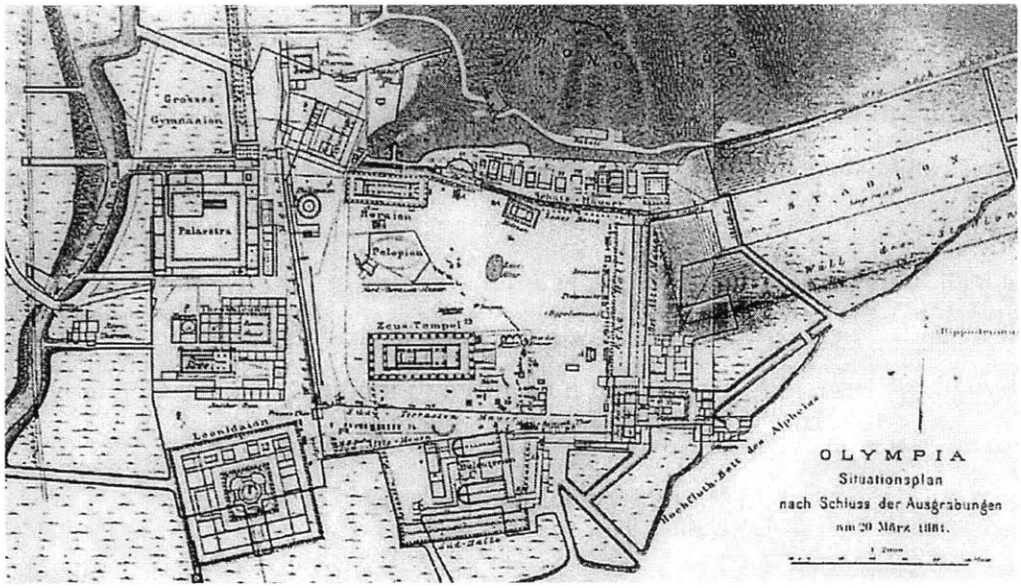

Figure II.1: Olympia Plan after the first excavations, W.Dorpfeld, 1881

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legend, he represents all the values and virtues, both spiritual and physical that must exist in a person, who seeks excellence, in order to serve the society efficiently.

The people who traveled throughout the Greek world to Elis and Olympia to participate in the Games had to comply with many restrictions. First, they had to be Greek citizens. They must not have been declared or convicted as dishonorable or atheists, found guilty of murder or of robbing a temple or violating the Truce. They had to prove that they were trained for ten months before the Games, and they had to appear in Elis at least one month before the Games to train in the Gymnasiums and the Palaistra (Yalouris, N. 1976).

The supervision of the whole program of the Games, as well as the keeping of these prerequisites was entrusted to Hellanodikais[4] and other Elean authorities[5]. The role of all the relevant authorities was to ensure the correct operation of the Sanctuary of Olympia as well as the preparation, organization and supervision of the Olympiads. Of course, all these activities required appropriate spaces such as temples, courts, offices, dwellings and public places that were all concentrated in the city of Elis. These are the activities that nowadays are reserved to the Olympic Village during each Olympiad. During the continuous existence of the Game for over a thousand years, the whole city of Elis and its authorities served the needs of the Olympiads on a permanent basis. It is obvious that the city of Elis was the primordial Olympic Village.

With the growth of the Hellenic world and the spread of Greek philosophy and culture, the concept of Hellenism acquired new dimensions. The Athenian philosopher Isokrates (436-338 BC) in his oration "Panegyrikos" in the beginning of the Games declared that Greeks are not only those from birth, but also those who share the same culture and education (Paideia). As early as the second century AD the Games had become ecumenical. Even though the Games were transformed into a world-wide festivity, the spirit of noble competition and the ideals of athlos and contest remained unaltered (Yalouris, N. 1976).

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[4] The judges of Hellenes, the Greeks.

[5] Apart from Hellanodikais there were also Mastroi, Manteins, Theokoloi and Nomophylakes who taught the rules of the Games.

The Modern Olympic Village

The foundations of the modern Olympic Village can be found in the ideas of Baron Pierre de Coubertin, the French humanist, whose vision shaped the Games' first revival in 1896. The "modern Olympia" was a spatial translation of Coubertin's ideas, inspired by internationalism and aspirations of world peace, both of which were characteristic of the ideas of the "European Intelligentsia" in the first half of this century and also inspired by the belief in sporting activity and sports education as means of achieving those absolute objectives (Muñoz, F.1996).

Coubertin wanted his modern Olympia to be a "city" devoted exclusively to the celebration of art and sport: *"...The Olympic City must be steeped in a sort of gravity which need not necessarily be austere and need not exclude joy, so in the interval of silence between the Games it will attract visitors as on a pilgrimage and inspire in them a respect due to places consecrated to noble memories and to potent hopes."*[6] He believed deeply in organized athletics as an agent of both physical and cultural renewal.

As late as 1910, in Paris, after four modern Olympic celebrations, Coubertin persuaded the International Olympic Committee (IOC) to sponsor an architectural competition for a "modern Olympia"; a *semi sacred precinct* in which buildings and landscape were perfectly harmonized in an expression of dignified and lofty purpose and its function did not begin and end with the celebration of the Games.

Although a preliminary Village was built in Paris, consisting of temporary wooden barracks, the first modern Olympic Village appeared in 1932 in Los Angeles. At a 1930's conference of the IOC in Berlin, Zack Fermer, the General Secretary of Los Angeles Organizing Committee, presented the "Village of the Universe" or the "Village of dreams", as the solution to the major problem of the athletes' accommodations that had emerged even from the previous Games. The first modern Olympic Village in Los Angeles was sponsored and developed by the "Garland Group".[7]

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[6] Pierre de Couberdin. *Revue Olimpique*. International Olympic Committee, Paris, 1910. (Gordon, B. 1983)

[7] The "Garland Group" included thirty industrialists, oil pioneers, tourism developers and businessmen like, for example, the movie magnate Louis B. Mayer. William May Garland was a real estate developer in Los Angeles and a true architect of the organization of the Olympic Games. The Garland Group decided to invest in the Olympic Village because it wanted to create new employment and profit opportunities for those who had suffered during the 1929 stock exchange crash.

Figure II.2: Los Angeles 1932 - The first Olympic Village erected on the Baldwin Hill

The second modern Olympic Village was built for the 1936 Berlin Olympic Games. Although in Berlin there was enough hotel capacity in the city to accommodate the athletes and the participants, the Organizing Committee decided to use the Döberitz military camp, close to the Olympic facilities, for delegations requiring cheaper accommodation (Muñoz, F.1996).

The primary plans for the Village included 14 housing buildings for 3,500 athletes. Because of an increase in the number of participants to 4,500 athletes, the plans were revised with additional units. The plans included athletic facilities, a reception and a management building, a dining hall and a conference room. Each unit included 8-12 double-bedrooms, bathrooms, and a common room with telephone. Furthermore, special emphasis was given to the decoration, furnishing and coloring of the units. The location of the Village was 14 kilometers from the Olympic Stadium and only male athletes used it. The 360 female athletes were accommodated in "Freisen House", which was closer to the Stadium.

The Los Angeles and Berlin Villages inaugurated the model of what Olympic Villages were going to be like before the break imposed by the Second World War[8]. Both cities gave rise to a "model" of modern Olympic facilities. The basic feature of the first two Olympic Villages was the conception of the Olympic residence as something more than just a place for accommodation and a functional place for board and lodging. The existence of several facilities for athletes, such as training grounds, and rest, recovery and leisure areas, underlined the additional facilities that should be included from now on in the design process of the "Olympic City".[9] The lessons learned here would influence every later Village.

Figure II.3: Berlin 1936 - General view of the Olympic Village

[8] The Reichssportfield of the Berlin Olympic Games could be considered as the first complex set of sporting scenarios and received the gold metal in the artistic competition in the city planning category (Wimmer, M. 1976).

[9] Besides the housing devoted to accommodation, dining rooms and the administrative office, the Los Angeles Village also included a hospital and an open-air theater. The Berlin Village was rounded off with an indoor swimming pool, two gymnasia and a sports field. Other facilities and services contemplated with equal importance were those for the press, cleaning and food services, as well as for the restaurants, communications and telephone network or for security – there were policeman and private detectives in both Villages (Muñoz, F. 1996).

The Post-War Olympic Villages

After the end of the Second World War, the organization of the 1948 Olympics was passed on to London. Because economic conditions did not allow the construction of an Olympic Village, the solution adopted was to use available military facilities. Two RAF camps, Uxbridge and West Drayton, one camp that had been used as a hospital for war victims at Richmond Park, and a series of schools in Middlesex county were converted into settlements for the male athletes, while the female athletes were accommodated in three colleges in the Greater London Area.

A total of 25 different places were used to shelter the participants, a fact that caused tremendous problems in commuting to and from the training and competition sites. The most serious problem was the food for the athletes, which caused diplomatic tensions between the USA and the UK as well as a crisis within the Labor Government. Despite the difficulties, the places of accommodation of the 4,500 athletes were equipped with various services like banks, laundries, cinemas and small shops. The installation of these amenities used up 22% of the Olympic budget. Thus, this Olympic residence model differed substantially from what had been common practice at the Olympic Games held in Los Angeles and Berlin.

The first post-war Olympic Village was built in Helsinki in 1952. Its primary difference from the previous ones was that it accommodated only the competitors in the athletic events. The competitors taking part in other events such as rowing, shooting, equestrian events or wrestling were accommodated at different institutions whereas the women were housed in the city's nursing school, 1 km away from the Stadium (Muñoz, F. 1996).

Figure II.4: Helsinki 1952 - For the first time the Olympic Village consisted of multi-story buildings

The location chosen for the Village was the suburb of Käpylä, the same location as had been chosen for the 1940 Olympics, which were canceled because of the war, and the whole operation was part of the social housing plans of the municipality. The Village of Käpylä accommodated 4,800 people, while satellite settlements with a maximum capacity of 600 people served the needs of athletes in the pentathlon and the Finnish team. The main Village consisted of 13 four-stories buildings, a cinema and 13 steam baths. The meals were served in a tent-restaurant with a capacity of 1,600 people. The 42 buildings, which were the result of the Games, were given to the municipality of Käpylä for public housing.

For the 1956 Olympic Games, Melbourne adopted almost the same model as Helsinki. Although the organizing committee at first wanted to take advantage of the city's university facilities, they finally decided to build an Olympic Village. The Village, located in the suburb of Heidelberg, accommodated for the first time men and women together, a total of 4,400 athletes. The Village consisted of one and two-stories buildings that included the athletes' apartments and a unified building complex that included a conference room, a cinema, and two meeting places and had a total area of 2,600 m^2.

For the first time an "International Zone", where facilities besides housing were located, appeared in the Village. It was very well organized and included a medical center, twenty dining halls and an international restaurant. After the Games the Village was turned into a cottage housing estate.

Figure II.5: Melbourne 1956 – General view of the Olympic Village

For the first time in the history of the Villages, the housing of a large number of athletes had created a large amount of permanent housing. This new concept of permanent structures was the contribution of the 1950's to the legacy of the Olympic Villages and became a characteristic of all subsequent Olympic Villages. Melbourne closed the first post-war period. Since 1960, Olympic Villages have generally taken on a more complex urban residential character, due in great part to their more permanent structure.

Urban Villages, from Rome 1960 to Seoul 1988

Martin Wimmer characterizes the Olympic Village of the Rome 1960 Olympic Games as "the first modern residential quarter in the city" (Wimmer, M. 1976). For the first time ever, there was a regional conception of urban development as well as an urban and regional plan that showed the Olympic facilities as the physical spatial expansion of the city. The Olympic Stadium and the other athletic facilities represented key elements in this urbanistic approach, and the Olympic Village was designed more as a permanent

residential area than as a solution to the temporary accommodation of athletes. This feature became commonplace in later Games.

The Olympic Village was located in "Campo Paroli" in the "Flaminio" neighborhood, north of Rome, just 5 km from the Olympic Stadium. It was developed over a total area of 350,000 m^2 and consisted of 11 neighborhoods with a total of 33 3-5-story buildings. It had a total of 1,800 apartments and accommodated 10,330 athletes. A fence decorated with plants divided the Village into male and female sections. The 33 companies that invested in the development of the Village, added reception offices, ten restaurants, shops and cinemas as well as the first "Social and Recreation Office" to the plans.

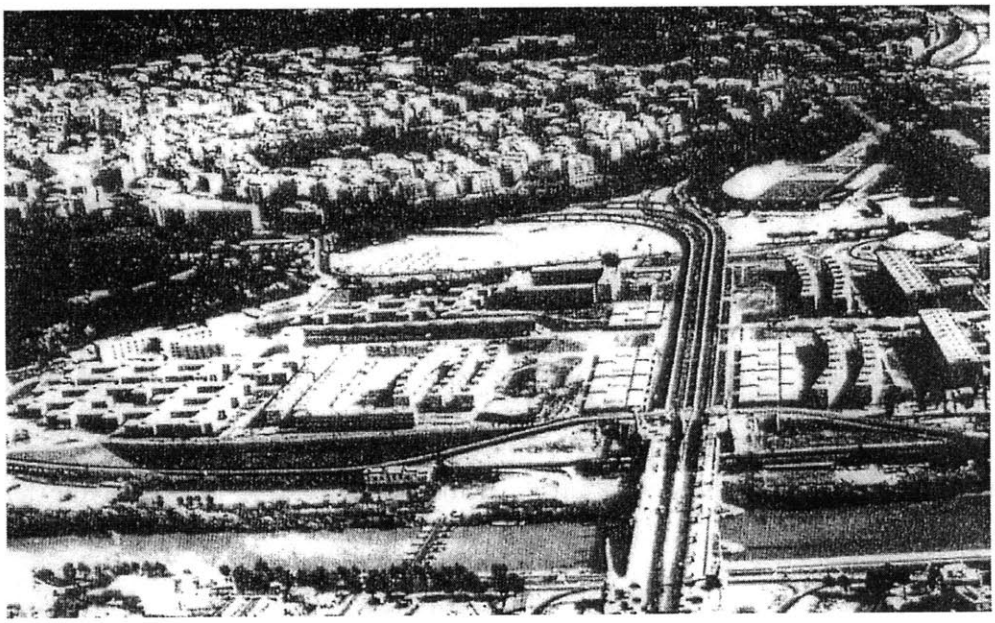

Figure II.6: Rome 1960 - The first "Urban Village"

From the planning point of view, it is worth mentioning that Rome's Olympic plan was reorganized based on two major poles, the "EUR" and the "Foro Italico", which were connected with the new Olympic Avenue that crossed the Village. After the end of the Games the Village became housing for public sector employees.

For the Tokyo 1964 Olympic Games, after negotiations with the United States Army, the Washington Heights area in Yoyogi was chosen, an area that had been used to accommodate military personnel stationed in Tokyo after the Second World War. The idea was to use the already existing housing. The construction of the National

Gymnasium and the allocation of 10.56 hectares to the Japan Broadcasting Corporation cut the area of the Yoyogi Village down to 66 hectares, making the installation of training grounds difficult (Muñoz, F. 1996). The Village was divided into seven neighborhoods and for orientation reasons the buildings in each neighborhood were painted in different colors. After the Games the Village became a youth hostel for a while and then it was demolished.

The city of Tokyo had significant transportation problems that had resulted from rapid metropolitan growth. The attempts to solve these problems through improvement of the transportation infrastructure led to the spread of the athletic facilities. The large distances between the Yoyogi Village and the competition sites, forced the authorities to create two additional Villages in two hotels.

Figure II.7: Tokyo 1964 - General view of the Yoyogi Village

For the 1968 Mexico City Olympic Games two Olympic Villages were created: the "Miguel Hidalgo" Village where the athletes and journalists were accommodated, and the "Narciso Mendoza" Village, better known as "Villa Coapa", where the judges and participating entertainment teams in the "Cultural Olympiad" were accommodated. Both complexes were made up of large mass-housing blocks, the common practice of social housing policies at the time.

The first Village was built south of Mexico City next to the Olympic Stadium on public property. The developer and future manager of the project was a bank, while the government constructed and supervised the whole project. 24 buildings between 6 and 50-stories tall were built with a total of 904 apartments. During the Games the Village accommodated 8,200 people. The rest of the Village facilities were built based on the guidelines and requirements that the IOC issued for first time and covered a total area of 9,000 m^2.

The new IOC guidelines concerning the design of the Olympic Villages included guidelines such as: access to the village, medical facility requirements, instructions for the construction of accommodations, and the provision for workshops, and shops, and leisure facilities. Further they mentioned selected previous Olympic Villages and discussed how they met the IOC requirements. This discussion included construction costs, type of construction and Post-Olympic use of the Village (OCOG Athens 2004, 1999 pp. 128-134).

Figure II.8: Mexico City 1968 - The "Miguel Hidalgo" Village

The second Village consisted of 686 2-story and 90 4-story buildings. Public corporations were responsible for the development and management of the Village. The distance between the two Villages was 96 km. After the Games the houses and apartments of both Villages were sold to medium income families.

Figure II.9: Mexico City 1968 - The "Narciso Mentoza" Village

For the 1972 Munich Olympic Games, the "Oberwiesenfeld" Olympic complex was situated just 4 km from the city center. Within the complex, the Olympic Village was formed by a set of mixed style buildings that could accommodate up to 12,000 people. The Village was divided into a residential zone and an international zone, with the "International Center" and the "International Park" being where the Village's logistic and leisure services were concentrated. This system of zones, used in the Munich Village for the first time, was subsequently adopted by the IOC and included in the Guidelines for future Olympic Villages.

Another contribution to the legacy of the Olympic Villages was introduced after a terrorist attack within the residential zone of the Village: special security measures became a requirement for all future Olympic Villages.

Like previous Olympic Villages, after the end of the Games, the Village apartments were sold to medium and low-income young people and couples. The whole area has remained a major point of interest and despite its suburban character is directly connected to the center of the city.

Figure II.10: Munich 1972 - General view of the Olympic Village

The Montreal Olympic Village for the 1976 Olympic Games was also built in the central Olympic complex. The initial proposal to build a temporary village consisting of 2-story buildings was rejected and instead a set of 4 large semi-pyramidal buildings 19-stories high were constructed. In the first and the second floors of the buildings were located the offices and maintenance quarters; the rest was used for accommodation. After the Games the apartments were transformed into bigger apartments and were sold to medium-income older people.

Figure II.11: Montreal 1976 - The pyramidal buildings of the Village

For the 1980 Moscow Olympic Games the Village was built in an area of 107 hectares southwest of the City. The Village was part of the city's Development Master Plan, 1971-1990, within the general context of the 10th 5-year Plan of Economic and Social Development. It included 18 16-story pre-fab housing blocks, a large sports complex with facilities for training and playing sports and a facilities zone which included a multi-purpose hospital building, and a cultural center. The residential zone followed a linear arrangement and included three squares and nine neighborhoods. After the end of the Games the apartments were given to young families.

Figure II.12: Moscow 1980 - The Olympic Village

The experience of the Los Angeles 1984 Olympic Villages demonstrated how convenient it could be to use University campuses for creating flexible Olympic Villages. Los Angeles was a total contrast to the previous cases, because it went against the approach prevailing in Olympic urbanism in which the Games had been used in one way or another to set up urban action programs (Muñoz, F. 1996).

The city already had 17 of the 23 required competition facilities, so the impact of the Games on the urban structure was minimal. The Organizing Committee, having had the idea to use existing facilities and minimize the total cost, decided not to build any new residential complexes but rather to accommodate the athletes in three university campuses that contained the necessary technical services, logistics and facilities.

The University of Southern California (USC) Village was characterized by its proximity to the city center and by the closeness of the building units. The main management problem was the organization of pedestrian and service-vehicle traffic. In contrast the University of California at Los Angeles (UCLA) Village was defined by the isolation of the buildings on the campus, so the services were concentrated along the "main street". In both, an important element with regard to the resulting space was the introduction of décor elements not only used to facilitate signposting but also to give a sense of identity and homogeneity to the whole (Los Angeles Olympic Organizing Committee, 1985). The University of California at Santa Barbara (UCSB) Village accommodated the athletes for the water sports. Together the three villages accommodated 12,300 participants.

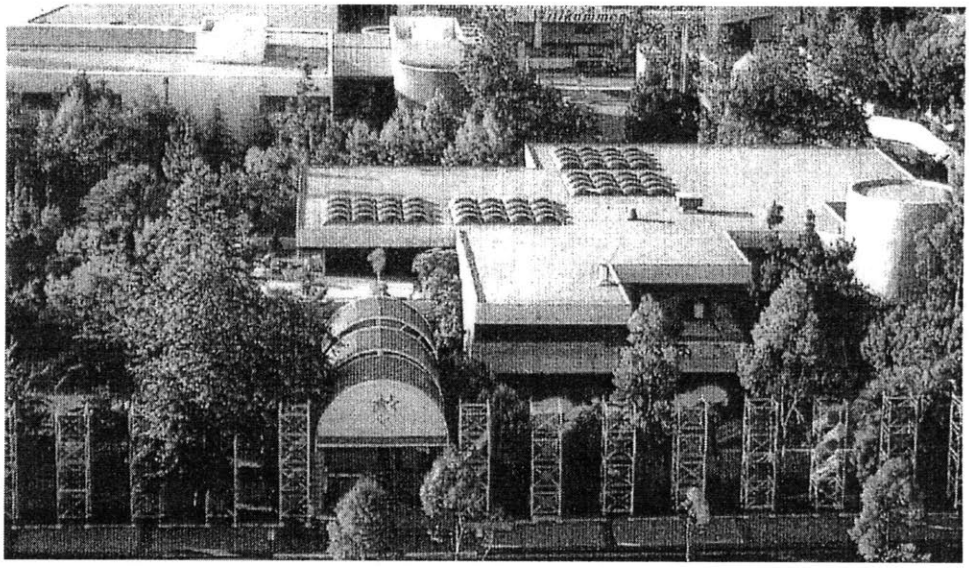

Figure II.13: Los Angeles 1984 - the UCLA Olympic Village

The Olympic Village for the 1988 Seoul Olympic Games was built inside the Olympic Complex and its interesting design offered the administration buildings an incredible view at the Olympic Stadium, which was only 3 km away. The Village was located in the "Chasmil" area to the southeast of the City, a dysfunctional area since 1960 with pollution and density problems. The location served a primary goal of the Olympic Committee: to use the Olympic operations for major urban renovation plans. The basic

ideas to revitalize suburban areas in crisis and encourage programmed urban, economic and territorial decentralization activities were very successful.

The Village consisted of 80 buildings 6 to 24-stories high and accommodated over 14,000 people. After the Games, the Village was transformed into apartments for young couples. The Village contributed much to the revitalization of the area and enhanced its connectivity to the center of the city.

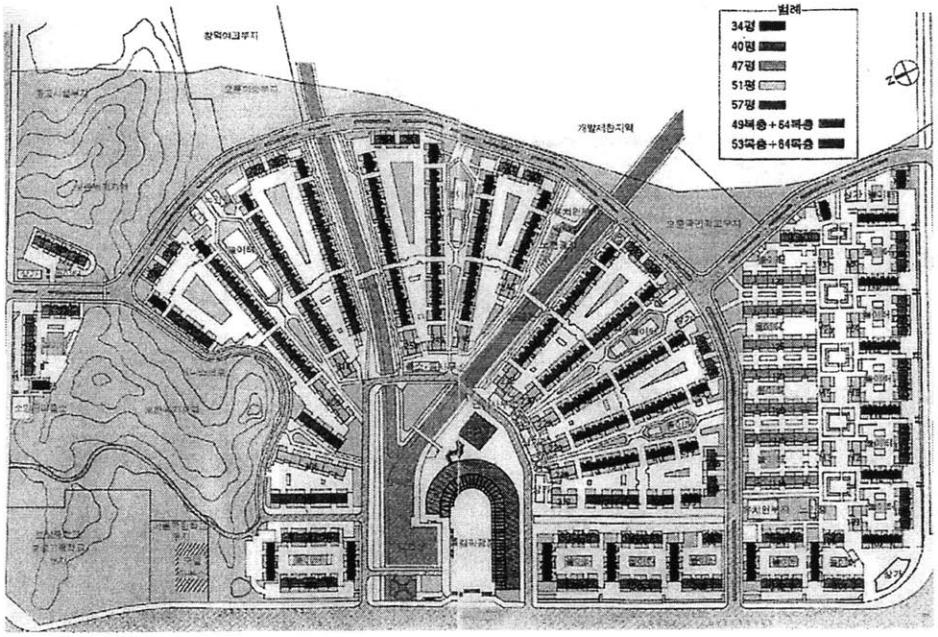

Figure II.14: Seoul 1988 - The master plan of the Village

The Most Recent Experiences: Barcelona '92 and Atlanta '96

The two Villages of the '90s, the one in Barcelona and the other in Atlanta, will close my discussion of the history of urban transformations experienced by Olympic host-cities. Although the models adopted for these Villages were similar to those in Seoul and Los Angeles respectively, their cases are extremely interesting in terms of urban development and design. For the first time, questions about the internationality of the host city and the Olympic legacy were incorporated into the development process (Nel.lo, O. 1997). Furthermore, the character of the modern Games as a worldwide festivity influenced the structure of the Villages not only to the extent of internal functionality and efficiency but also to the extent of external compatibility with the host-city's plans for economic growth and sustainable development.

Barcelona '92 Olympic Village

Barcelona's metropolitan region, with a population of 3.5 million inhabitants, is the sixth largest metropolitan region of the European Union and it is considered the second capital of Spain. The metropolitan area of Barcelona reached its present size during a period of very fast population growth in the '60s and early '70s. In 1979 the city began a very ambitious program of urban regeneration based both on rehabilitating central spaces and on looking for a new equilibrium between center and periphery.

When the city was selected for the 1992 Olympic Games the decision was that the Games were to be the Games of the city and in the city (Millet, L. 1992). Accordingly, four areas were chosen inside the municipality of Barcelona to locate the four Olympic Areas: a. Montjuïc, where the Stadium, the sports palace and the swimming facilities were located, b. Diagonal, c. Vall d'Hebron and d. Poblenou, Olympic Village (Nel.lo, O. 1997)

Poblenou, where the Olympic Village was to be located, was an old industrial area that appeared in the 19th century, concentrating both industrial sites and working class housing. It had been one of the centers of the industrial revolution in Spain. The project was developed by a team of architects and planners led by Oriol Bohigas, one of Barcelona's most influential planners.

The starting point was that the Olympic Village was to be, after the Games, a normal area of the city perfectly integrated into it, a normal neighborhood and not an anomalous phenomenon or an urban ghetto. (Martorell et al., 1992)

From this starting point, the project developed three sets of ideas connecting:

a. Infrastructure: the idea that this area was to create the basis for effectively opening up the sea front of the city.

b. Morphology: the continuity of urban pattern, streets, squares, blocks, following the 19th century grid designed by Ildefons Cerdà, the engineer who planned the physical expansion of Barcelona in the 19th century and one of the fathers of contemporary planning.

c. Uses: not only housing but spacious commercial areas and offices.

These ideas derived from a basic proposition: it was possible to reconstruct the European city by attending to its traditional morphology, and therefore avoiding fragmentation and peripheral sprawl (Nel.lo, O. 1997).

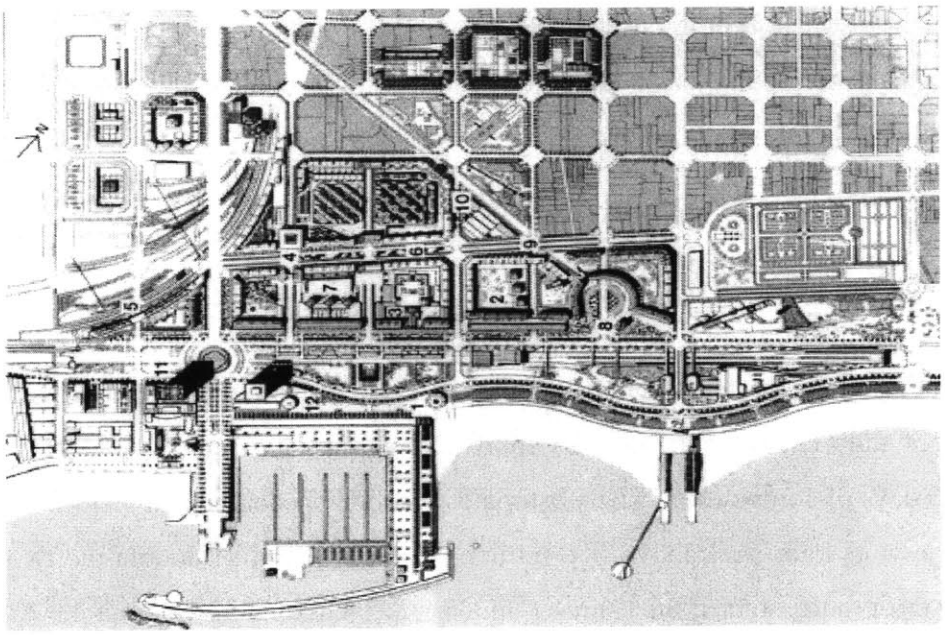

Figure II.15: Barcelona 1992 - The master plan of the Poblenou Olympic Village

When the project was completed, the Village consisted of multiple building complexes with a maximum of 6-stories, organized leisure and recreation spaces, 200 commercial spaces, one hotel, office spaces with a total of 70,000 m^2 and 2,000 underground parking spaces. For the completion of the most successful Olympic Village in the history of the Olympics, 19 international architectural offices collaborated, designing 533 different building prototypes and 90 different uses. The Village was the first in the history of the Games to be by the sea, where the athletes could enjoy the beaches with no threat to their safety. The developer and manager of the project was a public/private partnership company. After the Games the apartments were sold to medium and high income families and the whole Village was embedded into the city's fabric.

The Olympic operations in Barcelona changed the character of the city to be more pleasant, more welcoming, more friendly and more cultivated (Millet, L. 1992). Barcelona's implementation strategies that assured both the success of the Games and the promotion of its international character have become a model for the Olympics to come. Athens, sharing many common characteristics and a similar profile to Barcelona as a Mediterranean metropolis, has adopted this model and is implementing it in its strategic plans for the 2004 Olympic Games.

Atlanta '96 Olympic Village

Atlanta hosted the largest Olympic Games ever in 1996. There were 10,744 athletes with 7,060 male and 3,684 female, representing 197 countries. It was the largest official program of the Games ever, with 26 sports, 37 disciplines and 271 events presented during 16 days of competition. Many estimates for total spectators and visitors during the Olympic period were well above five million people, more than double the two million expected prior to the start of the Games (United States Organizing Committee, 1996).

The Atlanta Olympic Village was conceived and designed "for the ultimate convenience and enjoyment of the 15,500 athletes and officials expected in Atlanta for the 1996 Summer Games" (Atlanta Committee for the Olympic Games, 1996). The Village located on the campus of the Georgia Institute of Technology (GIT), used the Los Angeles '84 model of organization. The location was selected for three primary reasons:

a. Competitive sports had been a part of campus life at GIT since its founding in 1885. The new facilities developed to support the athletic events have given the Institute an extensive network of training and competition areas.

b. The well-organized internal restaurant and cafeteria style dining facilities.

c. The pressing need for student and faculty housing at GIT required the construction of new buildings. GIT in collaboration with the Organizing Committee erected the Olympic Towers, a major architectural contribution to the Games, which were used to accommodate 9,500 athletes and afterwards to provide for the housing needs of the campus.

Also inside the Village a "Festival center", a large shopping mall, was built. From the Atlanta experience derived strategies for organizing mega-events with minimum cost while utilizing existing infrastructure.

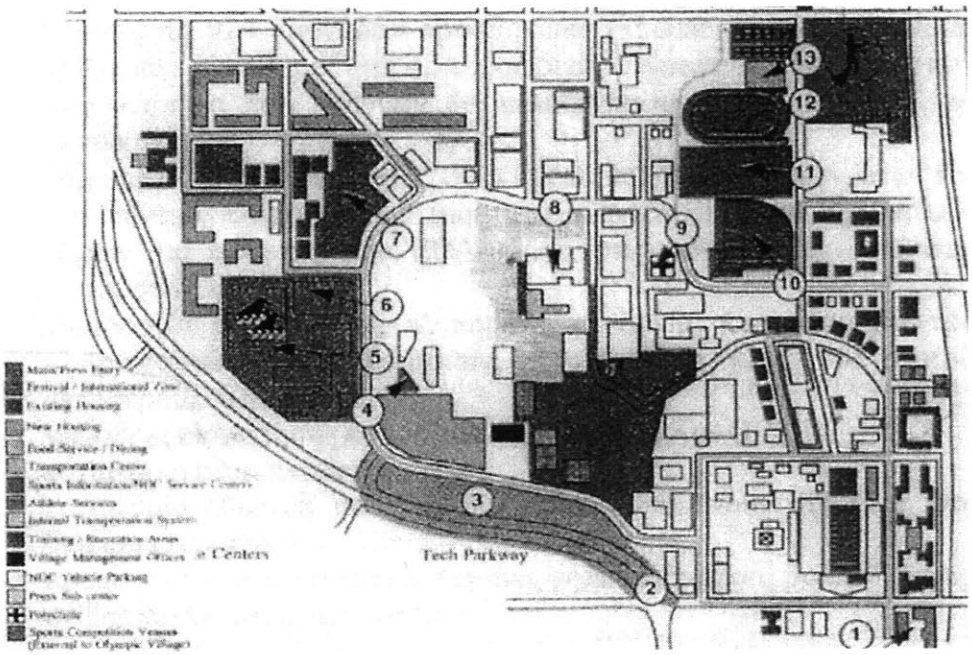

Figure II.16: Atlanta 1996 - The master plan of the Village in the GIT campus

The Legacy of the Olympic Villages

After the Games finish, the post-Olympic legacy of the Olympic Villages begins to develop. This legacy is comprised of three parts: first the physical remainder of the Village; second the development the host city seeks from this physical structure; and lastly the contribution of knowledge to the further evolution of the Olympic Villages.

While the pre-World War II Olympic Villages were temporary and did not have a post-Olympic purpose or structure, they still contributed to the early development of the legacy of the Olympic Villages. The Villages of Los Angeles '32 and Berlin '36 set the initial conceptual model upon which the subsequent Olympic Villages were built. This model included organized housing units with telephone networks, basic athletic facilities such as training fields and gymnasia, restaurants and hospitals. Although both Villages were temporary, they added significant experience on how to meet and plan for the needs of the athletes during the Games (Muñoz, F. 1996).

Also, the construction of both of these Villages, as we have seen, served as a solution to the unique social needs of the host society. On the one hand, the Los Angeles Village offered employment opportunities to those who were suffering from the stock market crash, and on the other hand the Berlin Village aided the aggrandizement of German national pride as the society was gearing up for war (Barclay, F. 1983).

It is evident that the Olympic Village started to have a dual role in the pre-war period: a well organized housing solution for the athletes and a project that would meet the social needs of the host city. The Berlin Village closed the first period in the Olympic Village's evolution leaving behind a legacy that the Village is an important element of the Olympic facilities and a necessary structure used to accommodate the emerging athletic needs.

The second period of the Olympic Village's evolution includes the post-war Villages[10] of Helsinki '52 and Melbourne '56. Both Villages faced the problem of hosting an increasing number of participants and utilized the lessons of supply and facilities learned in the pre-war period. The Olympic Games were already an established international athletic event, which were attracting more and more participants and spectators every year. To accommodate the needs of the athletes, an average of 4,000 in

[10] Although the London 1948 Olympic Village belongs in this period, as we have seen, a Village was not built because the post-war economic conditions did not allow its construction.

both cases, the Villages were designed with permanent multi-story buildings and functional zones. Unlike the earlier experiences in Los Angeles and Berlin, the Villages of the 1950's were intended to be permanent and included additional permanent facilities such as medical center, restaurants, shops and offices and separated the Village's uses into residential and non-residential areas (Muñoz, F. 1996). This offered the opportunity to create a viable new community after the Games had left the Village.

The Olympic Villages were no longer a cheap temporary solution for athletic accommodations but projects that required extensive planning and design ahead of time and consisted of permanent installations in buildings and infrastructure. For the first time, planning for the Olympic Village required consideration of its final use. The need to take advantage of the new permanent Village resulted in the post-Olympic use of the Village for housing. Helsinki's Village, embedded in the residential community of Käpylä was used for public housing, and was considered as successful post-Olympic development by the Melbourne Olympic Committee. They then planned and designed the 1956 Olympic Village as a cottage housing estate. Both new communities alleviated the growing needs of the host city for housing (Muñoz, F. 1996).

The legacy of the '50s Villages is, first, the accommodation of the growing needs of the Games, and second, the construction of permanent housing that can be used after the Games to meet the needs of the surrounding communities. It is obvious that the character of the Olympic Village at this point changed from a temporary athletic facility to a permanent project serving both athletic needs during the Games and community needs with its post-Olympic use. This legacy of permanent construction and re-use as housing influenced every subsequent Olympic Village.

The third period of the Olympic Villages' evolution includes the Villages of the '60s (Rome '60, Tokyo '64, Mexico City '68) and the '70s (Munich '72, Montreal '76). The multiple socioeconomic changes experienced by western societies during the '60s combined with the emerging trends in urbanism and the evolution of the cities directly influenced the character of the Olympics (Wimmer, M. 1976). As a growing, international and increasingly commercialized event, which had adopted a "tourism and sports" culture, the Games were now being used for the export and globalization of sports consumption. Also for the first time, planners saw ambitious urban development and

architecture projects, which accompanied the Olympic facilities, as development of the host-city's vision for territorial expansion and promotion of its image (Muñoz, F. 1996).

The Olympic Villages of the '60s and '70s as part of an urban revitalization and redevelopment process resulted big building complexes that were accompanied by major transportation infrastructure projects. For example, the Villages of Rome and Tokyo were accompanied by newly constructed avenues, which connected them with the center of the city and the other athletic facilities and eased the city's transportation problems. Also their strategically selected locations at the borders of the cities resulted the creation of new neighborhoods (Rome, Mexico City) or the expansion of existing ones (Munich, Montreal).

In general, the Villages of this period are still functioning to this day and have provided positive models for the continuing development of the Olympic Villages. One major exception is the Tokyo Village of 1964. The eventual demolition of the Village suggests that it did not adequately respond to the unique needs and circumstances of the host city. However this does not mean Tokyo's Olympic development was a failure as the majority of the construction funds were targeted towards transportation infrastructure to meet the pressing needs of the city (Barclay, F. 1983).

The legacy of this period is the integration of the Village into an overall urban and regional plan for the expansion and development of the host city. This was accomplished by the extensive planning and design of the Village and Olympic infrastructure developments, and by learning from the legacy provided by each previous Village.

The Villages of the '80s (Moscow '80, Los Angeles '84, Seoul '88) and the '90s (Barcelona '92, Atlanta '96) comprise the most recent period of the Olympic Village's evolution. The Villages of this period supported the revitalization of problematic areas and added the concept of integrating the village with the existing urban form to improve the host-city's structure (Moscow, Seoul, Barcelona). Also the concept to use and redesign existing facilities resulted from the unique cases of Los Angeles and Atlanta.

The legacy of the last decades' Villages is strongly connected with the development that the host-city seeks. The Olympic Games have become a mega-event, which offers the host-city the possibility of urban regeneration, a stimulus to economic growth, improved transport, cultural and athletic facilities, and enhanced global recognition and

prestige (Chalkley, B. and Essex, S. 1999). This concept has led the planning, design and development of the last decades' Villages. Seoul and Barcelona planned their Villages as part of their cities' fabric, which left behind a successful housing development. Los Angeles and Atlanta implemented their Villages into the existing structure of University campuses, which resulted in new university housing facilities.

The legacy developed through the experience of Olympic Villages to date is an ever-increasing body of knowledge. This body of knowledge provides suggestions on how to effectively and efficiently plan an Olympic Village. It provides models on how the different cities have responded to their unique needs to meet the requirements of IOC and of hosting an Olympiad, and on how to develop it to meet successfully the needs during and after the Olympics.

III. Athens' 2004 Olympic Village [11]

Location and Master Plan

The Olympic Village, which was an integral part of the ancient Olympic Games, was revived in Los Angeles in the 1932 Games and today has become a prerequisite for the modern Olympiads. Athens', like its predecessors, follows this model.

The area selected for the Athens Olympic Village is in the foothills of the mountain of Parnitha, the northern limits of the basin and city of Athens. The selected site, which is bordered on the northwest by the relatively new community of Thracomakedones, is part of a greater area with no building construction. Most of the land is wooded or used for flower cultivation. It is a privileged region because it offers a pleasant natural environment, yet is relatively close to the center of Athens.

The site is about 84 hectares, three quarters of which belong to the State. About 40 hectares will be used for the Village while the remainder will be used for the creation of an Olympic Park. During the Games some of the facilities in the Park will be used as official training areas. The whole Village area will offer to the athletes and team personnel all the necessary facilities for their welfare and recreation. After the Games the Olympic Park will serve the needs of the surrounding communities for an organized entertainment area.

The Olympic Village is 12 km from the Athens Olympic Sports Complex and the Olympic Stadium. The Sports Complex is the primary sports pole and is surrounded by the Press Village, the Press Center and the International Broadcasting Center (IBC). It is 22 km away from the secondary sports pole, the Faliron Bay Sports Complex, and 23 km from the Athens center and hotels where the IOC members and other official guests will be accommodated. Also, it is 31 km from the Hellinikon International Airport and 28 km

[11] The master plan, designs and proposals presented and discussed in this chapter are not final and are subject to change. The Greek government and the Hellenic Organizing Committee of the Games are still under negotiations for the final plans. The basic reason that I chose to present them in this chapter is to give an overview of the case as it is shaped so far and to present the basic guidelines necessary for the development of the Village. Besides the design proposals, all the additional data regarding the Games, the Village's location and the Village's status are valid and they have already been incorporated in legislation. The main source for all the data presented in this chapter is from the study: *Competition for the Urban and Architectural Design of the Athens' 2004 Olympic Village*, Vol. 2, Parts A, B, C conducted by the Organizing Committee for the Olympic Games Athens 2004.

from the new International Airport at Spata. Furthermore, the local airport, Dekalia, is even nearer to the Olympic Village, as well as Elefsina Airport, 14 km from the Village.

The site chosen for the Village is impressive in a number of ways. First it is in a beautiful natural setting with desirable views of the surrounding area. Second, after the transportation infrastructure is completed the area will be linked to all parts of Athens by the ring road and the extension of the metro system planned for the area, and to the rest of the nation and the globe by the close proximity of air travel. The surrounding community is not high income and stands to benefit from the development of infrastructure and facilities in this area – much like the troubled communities revitalized by the Seoul Village and others.

The planning for this development has begun. As in previous Villages the development must abide by the IOC regulations and guidelines, as well as meet the standards and regulations of the host-city. On top of these requirements the Athens' Olympic Committee has added a set of its own guidelines for the development. Both sets of guidelines have been informed by the lessons learned in each previous Village, for example the influence of Barcelona is entirely obvious in the guideline that the new construction be similar in orientation and adaptation to the surrounding community.

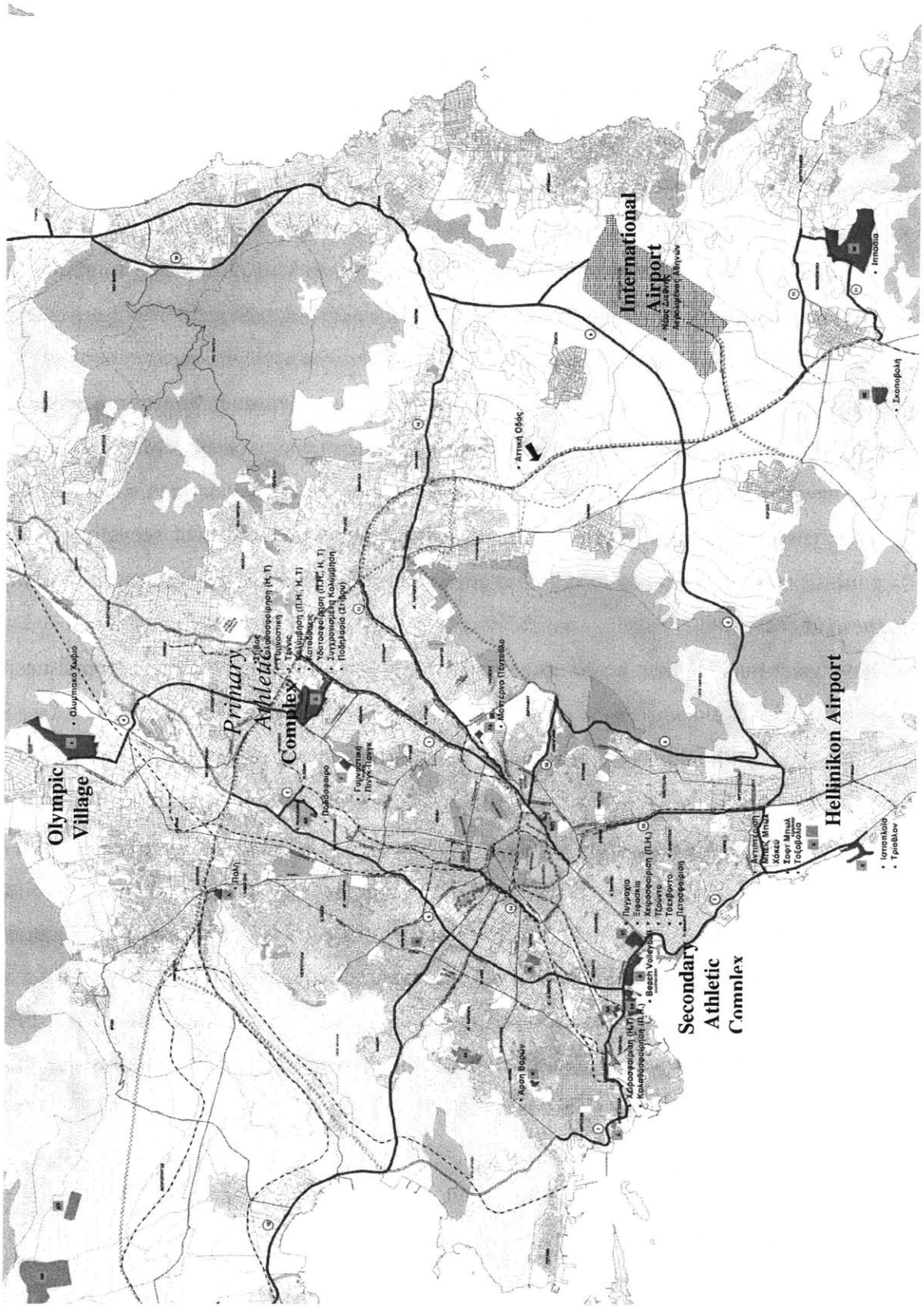

Figure III.1: Athens metropolitan area and the Olympic facilities locations.

The Basic Design Guidelines for Athens 2004 Olympic Village

The following design guidelines are based on the IOC Guidelines for Olympic Villages, the previous experiences of the Villages, and the choices made by the Athens committee:

a. Design and alignment of Village structures must relate to the form of neighboring communities. For example, height of the buildings should be similar to the surrounding structures. This guideline appears to be a lesson directly learned from the Barcelona success. The average height of the buildings will not exceed four floors. The structure of the buildings and the way that they are joined together will provide a unique architectural appearance.
b. The space allocated for public use such as shopping, culture, education, leisure, recreation and sports, will be equivalent to the residential area of the Village.
c. The use of new technologies to save energy. Among the applications used will be passive solar architecture, heat insulation in conjunction with heat recycling, heat pumps, servomechanisms to regulate energy exchanges, and cross-season storing of thermal energy.
d. New water management resources, on-site storage and improved watering techniques.
e. Use of a new solid waste management strategy and of new building materials.
f. Landscaping should use indigenous vegetation among the Olympic Village's buildings and parks. The landscaping of parks connected by "eco-routes" so as to turn the Olympic Village into a kind of ecological park.
g. The Olympic Village will be designed in accordance with the principles of the "Modern Movement",[12] which stresses the factors of correct orientation, good natural ventilation, many park and garden areas, and the circulation of natural air.
h. The design of all buildings and units should be flexible such that other uses of the space can be easily implemented. For example, a set of athletes' rooms can be cheaply converted into a family apartment.

The following diagrams show the current state of the plans for the 2004 Olympic Village in Athens.

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[12] It is interesting to note that the phrase "Modern Movement" was actually used in the guidelines published in *Competition for the Urban and Architectural Design of the Athens' 2004 Olympic Village*, Vol. 2.

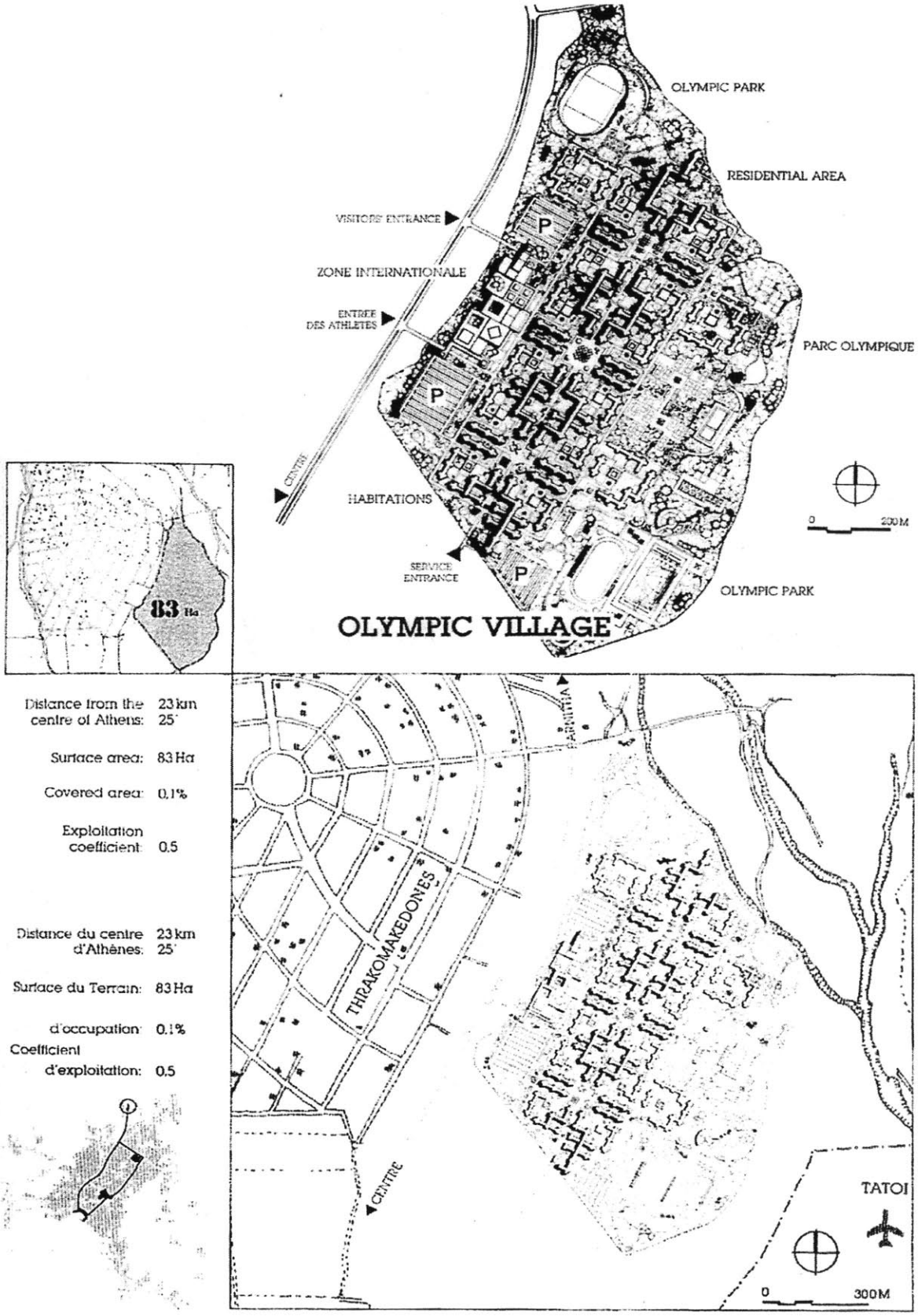

Figure III.2: Location and master plan for the Olympic Village

The Functional Zones

The Olympic Village master plan and IOC guidelines clearly defines three land-use zones:

A. The International Zone

B. The Residential Zone

C. The Olympic Park

The International Zone is adjacent to the community of Thrakomakedones and defines the northwest boundary of the Olympic Village. It will include the Olympic Center, a big complex with restaurants, shops, conference rooms, theater, cinema, the medical center, and public parking space. After the Olympic Games, this area will form the center of not only the proposed new community but also of the existing community of Thrakomakedones and other neighboring communities. It is possible for this area to be expanded in the future for business use or residential use.

The Residential Zone is a linear zone between the International Zone and the Olympic Park, and will accommodate 16,000 people. It consists of three community areas that each can accommodate about 5,500 people. The communities are developed around a cluster (piazza) that serves as a social and recreation area for the residents. A network of walkways starting from the piazza will connect the communities to and the other two zones. Each community area is further divided into five neighborhoods. Adequate office and storage space will be available for each delegation in the neighborhoods.

The Olympic Park forms the southeast boundary of the Village. It will be an ecological park containing all the necessary athletic training installations.

After the Olympics have ended, the current plan is that the Residential Zone will become housing administered by OEK and the Olympic Park will become a public park. The new residents of the area are expected to be medium to low income families.

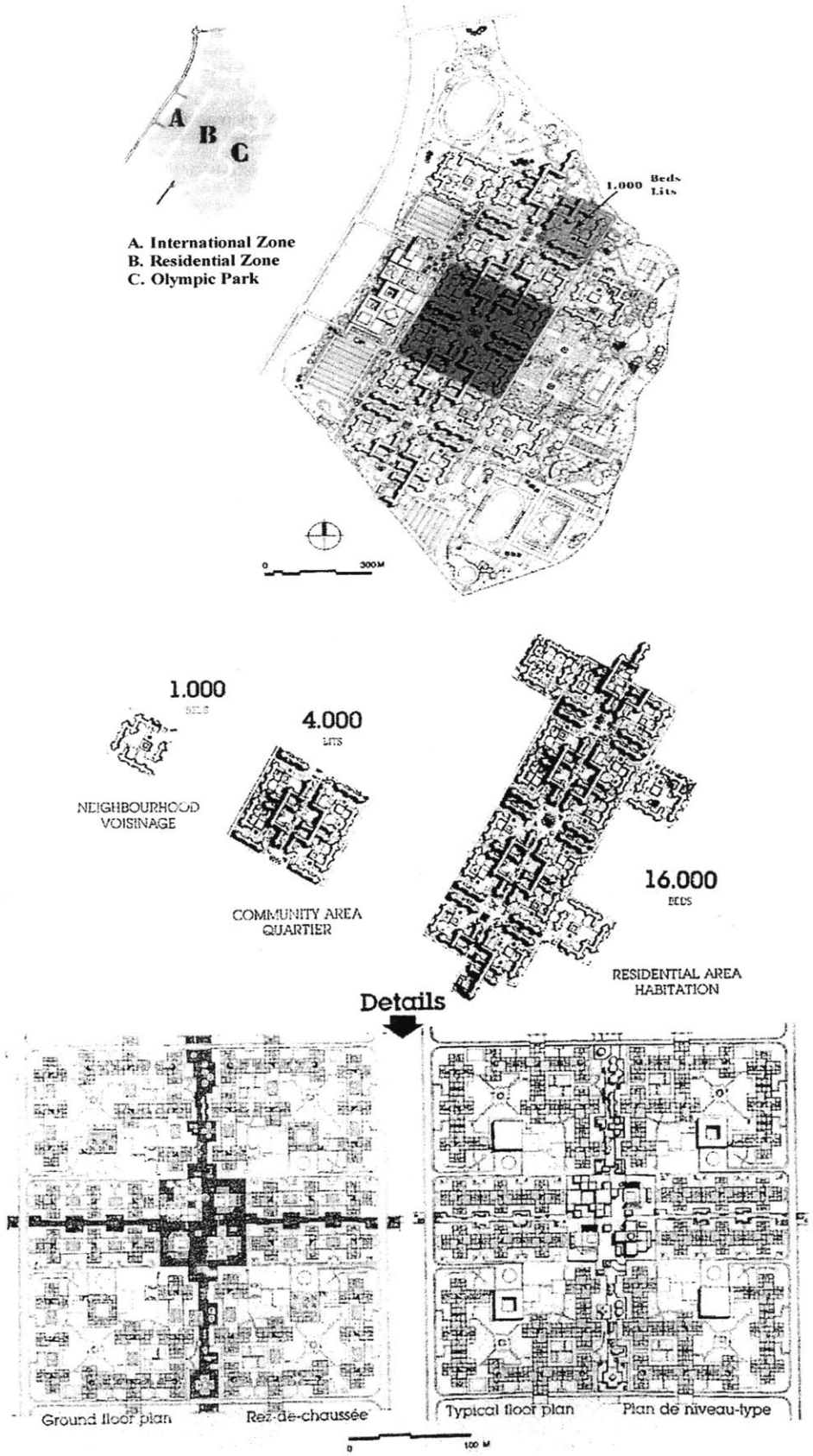

Figure III.3: Villages Functional Zones and Residential Zone's details

Information Technology Infrastructure

A unique characteristic of the Athens' Olympic Village as compared to previous Villages will be the advanced information technology infrastructure that will support all the functions of the Village and the needs of its inhabitants. Although the use of information technologies in the organization and conduct of the Games was introduced in the 1960 Olympic Games in Rome, the evolution of the Olympics into an international event with millions of spectators, has resulted in a major demand for telecommunications and information technologies.

Athens has already been renovated with digital telecommunication centers, satellite telephony and television, and high speed Internet Networks (100mbt, T1 and T3 lines). This new information technology infrastructure is required to serve both the needs of the athletes inside and outside of the Village and the athletic facilities, and the needs of the media, which will be broadcasting world wide, targeting over 35 countries and more than one billion spectators.

Although the details of the information networks that will be placed in the Olympic Village have not yet been announced, it is known that the Village and the rest of the Olympic facilities will include the latest technological innovations for use in the management of the Games and the Village, once the Games depart. The developer and manager of the information infrastructure is the National Organization of Telecommunications (OTE). OTE is expected to collaborate with international corporations such as IBM and Ericson on all information technology matters such as design and implementation of digital database centers, installation of database mainframes, real-time broadcasting database information and development of a wireless network for data exchange.

To best serve the needs of the Olympic Games, the information technology (IT) infrastructure is planned and designed at three scales:

At the small scale, the IT is planned to accommodate the personal needs of each participant in the Games. The athletes and their support staff are mostly concerned with their security and with having easily accessible and flexible communication. Each person wants to have immediate access to the latest news for events and programs and easy communication through telephone, fax and e-mail for his/her personal affairs and to feel

secure in all public and private spaces. Especially for the athletes, access to information about the latest performance of their competitors is important. For these reasons, telephones, fax machines, personal computers and Internet ports will be available throughout the Village as well as in the athletes' apartments. Also the wireless telephone network, which will be available throughout the facilities, will support all modern wireless communication appliances such as telephones, pagers, PDA's and minicomputers.

The medium scale refers to the organization of the space inside the Village and the other Olympic facilities. Information centers, electronic kiosks and digital wall-screens will be placed in the Olympic center and all other public spaces, which will provide all available information about the Games, life in the city, cultural and art events, and local and international news.

The large scale IT infrastructure design refers to the city and the broadcasting of the events to the international network. An information infrastructure consisting of wired, wireless and satellite networks is necessary to secure the success of broadcasting as well all the other communications at the national and international level. It is expected that worldwide spectators will be over one billion. The National Television and Radio Company (ERT), in collaboration with Greek private television networks, the European television network (Eurovision), and other international broadcasting companies, is currently working on updating and testing its broadcasting networks and planning for the successful covering of the Games.

It is evident that the success of the Olympic Games is related to the implementation of an advanced information infrastructure network. This information technology infrastructure, present in all athletic facilities and the Olympic Village, is in place to optimize the successful hosting of the Olympic Games. When the Games are over this infrastructure will remain in the Olympic facilities and the Village, awaiting further utilization. Also, the visibility of the Olympic Games and the internationality of the Olympic Village offer technology companies a chance to showcase their products on the latest technology in a world-known location.

Post-Olympic Use of the Village

The developer and manager of the Athens 2004 Olympic Village is the Workers' Housing Organization (OEK). OEK is the social housing agency in Greece. It is the main instrument through which the state implements its social housing policy and, at the same time, the largest organization in the housing construction field. The organized housing developments planned and built by OEK throughout Greece make up 95% of the total annual building activity in the public sector.

OEK is an economically independent organization that draws its funding from the contributions of working people and their employers. OEK's total revenues for 1997 amounted to 87 billion drachmas (around $250 million). Its operating expenses absorb 6% of its annual budget. OEK, in its forty-six years of operation, has covered the housing needs of a total of 265,000 families. It has provided 48,000 finished homes, 98,000 loans for beneficiaries to purchase or build their own home, and 119,000 loans for beneficiaries to extend, repair or complete an existing home that belongs to them. At the same time, it has contributed, by granting rent allowances, to 165,000 low-income families.

The plans for new OEK settlements, including the Olympic Village, are to create attractive and familiar urban areas, self-sufficient in terms of services, but also "open" to the surrounding region and its life. Within this environment, homes are designed with high standards of sunlight, lighting, and ventilation, with comfortable and functional interiors; they are adapted not only to the particular morphology of the terrain, but also to the local character and tradition of the region in which the settlements are built.

OEK is the agency responsible for building the model "Solar Village" settlement in Pefki, Attica, in which modern technologies are being applied in utilizing solar energy, and new active and passive systems have been installed to conserve energy. Also, OEK, through a special research program in conjunction with the Aristoteleon University of Thessaloniki, is attempting to achieve the maximum possible conservation of energy in its settlements, making them models in this respect for private initiative to follow.

OEK plans its actions taking into account pressing social needs. Through its modern programs, it is not called upon solely to house its beneficiaries, but also to help address social phenomena such as alienation, discrimination and exclusion, as well as the

marginalization of certain population groups (refugees, migrants, people with special needs, the elderly, etc.).

In this spirit, OEK will plan, build and manage the Olympic Village. With respect to ICO and Athens Olympic Committee guidelines, OEK is planning to build a Village that will be friendly to the environment and will blend in with the surrounding communities, by exercising all its previous experience in modern construction. Given that OEK has been designated as the developer of the Olympic Village, it seems clear that the intent is to convert it into housing for medium income families after the Olympics. Also the new community that OEK is targeting to create would have all related uses such as education, medical and commercial that will serve the needs of the inhabitants and their families.

It is worth mentioning that in contrast with the developers of previous Olympic Villages such as the many firms that developed the Rome Village or the bank that developed the Mexico City Village, OEK will use the Village for housing not for profit but to accommodate the need for public housing. This action, which complies with the social policies of the Greek government, led also to the decision that OEK should be the developer and manager of the Olympic Village.

Given OEK's expertise in buildings for the needs of the Greek population, their construction should be one that will be appropriate and successful in Greece and will be of benefit to its residents. The social dimension and character of the post-Olympic use of the Village will be also present in my alternative scenario, as it is an important factor in the decision-making process in Greece and I will argue for a better alternative use of the Village.

Discussion

The decision of the Greek government and the Organizing Committee of the Athens 2004 Olympic Games to appoint OEK as the developer and manager of the Olympic Village and to plan for its post-Olympic use as housing, has initialized a debate among public and private sectors representatives, planners, politicians, and scientists. The debate has focused on whether or not OEK should be the developer and whether alternative solutions, besides housing, should be explored for post-Olympic use.

To understand the facts surrounding the Athens Olympic Games and to provide evidence for my conclusions in this thesis, I interviewed[13] various people, who represent the various viewpoints concerning the future of the Olympic Village and the role of the Olympic Games in Greece.

With respect to whether or not OEK should be the developer, the answer seems to be yes, but only because of the lack of alternative solutions. In Greece today, the only experienced developer in large scale housing projects (over 2,500 units) is OEK. The private sector for urban development has just begun to develop and its experience has concentrated on small-scale projects such as shopping malls, office complexes, and small second-house developments (less than 200 units). In Greece 90% of all urban planning projects are undertaken by the public sector, which in some cases develops synergies with selected private organizations. To be sure, private non-governmental organizations (NGOs) have been created for managing major infrastructure projects. For example, the Athens Metro, SA is a private, autonomous NGO, specifically created for managing all the studies and projects that related to the construction of the new subway system for Athens. Athens Metro, SA is responsible for further joint ventures with other public or private organizations. The possibility of a private international developer or a joint venture with OEK or another public company is impossible because of inflexible legislation. Also, an action like that would be strongly criticized on the political level by the opposition parties in the parliament as an action that would not support the efforts and the development of the Greek public and private sectors.

With respect to the post-Olympic development of the Village there are currently two primary views. On one hand, there are people who support the housing option and consider it the best solution for the location and the image of the Village. Their basic argument is that the Village is located next to a medium income community whose status is not subject to change and whose primary land use is housing. Also, they argue that the surrounding area consists of many small private properties, which may prevent an alternative overall development for the area in the future. Using eminent domain to support a development at that scale is considered expensive and politically unfeasible.

[13] A list of interviewees is included in the bibliography.

On the other hand, many planners, without necessarily disagreeing with the housing solution, have entertained thoughts of alternative development of the Village that would introduce new aspects into the development process of Athens. The basic argument of this viewpoint is that Athens is a problematic metropolitan region, which needs innovative solutions to function properly. Because of its morphology, it is difficult for Athens to expand. Thus, it needs a system of regional centers, a polarized network, which would help the city face future challenges such as population growth, transportation efficiency, and demand for business, research and educational centers. Furthermore, this network of centers would be connected by major infrastructure and urban renovation projects, which are currently under construction. In this case the Village would be turned into an autonomous entity, perhaps, for example, a technology center, which would blend with the surrounding communities and would attract investment, vital for the city's future development. The concept behind the polarized network would be to concentrate similar uses in different places (poles), which would be spread throughout the city and connected with a functional transportation network. These poles would save time and energy by minimizing unnecessary or long commutes as well as by providing solutions in the organization of the city space.

Another element that must be taken into account in the debate is planning legislation. Because of the long history of the development and expansion of Athens into a metropolitan region, as well as the existence of an important historical built heritage, there are many laws, restrictions and complicated processes that do not allow a flexible decision-making system to flourish. Each decision for development has first to comply with all the restrictions and second to be validated by a vote in parliament. Thus, the post-Olympic development of the Village has to be a solution that would be time efficient and comply with all the planning restrictions. The current proposal of the post-Olympic housing complies with all restrictions that apply in the Thrakomakedones community.

At this point, it seems that another solution besides housing would be difficult to implement. Nevertheless, I will propose an alternative solution and argue that it would enrich the legacy of the Olympic Village and help Athens' development process.

IV. Enriching the Legacy of the Village

The Role of Information Technology Infrastructure

As we have seen in the previous chapter, the current scenario for the Athens Olympic Village would satisfy both the needs of the local communities and OEK's target of offering modern and high quality solutions to its clients. But this scenario does not take under consideration the factor of the information technology infrastructure, which, as we have seen, will contain the latest technological advances.

The role of information technology infrastructure in a built environment, and in our case in the Olympic Village, is dual. On one hand, it provides all the necessary networks for information exchange and on the other hand increases the flexibility and efficiency of a space by supporting alternative uses. For example, a living room wired with telephone and Internet connections can easily become office space or a teleconference room. Also, a café, which is a place for relaxation and socializing, can be turned into a virtual office by just providing some Internet ports where someone can plug in a laptop (Mitchell, W. 1995). Another unique characteristic of the information technology infrastructure is that it can be used to store large amounts of information in a small space. For example, the vast space required for a public library could be contained in a desk size mainframe.

In our case, the athletes' apartments in the Village will include the latest communication and data connections. These apartments could be turned into either family apartments or business space. However, families would likely only use the minimum potential of the installations, for example, by plugging a television or a low-end personal computer, while an office/business space could use the maximum potential of the available infrastructure.

The information technology infrastructure in modern societies has many uses. These uses spans family life in and out of the house, academic and research uses, and business life. Information technology infrastructure is the infrastructure that supports the exchange of information through electronic devices. This definition shows its important function to the way we live and conduct our business today. All the electronic devices such as television, telephones and computers that we use in our house, office or school, the services that we need to commute and communicate, and the health, commercial and

business services that we use to improve our everyday life use an extended information infrastructure network. This network is developed more and more by the advances and innovations in technology.

Such an advanced information infrastructure network will be implemented in Athens and its Olympic Village to ensure the successful operation of the Games and to satisfy the needs of the athletic delegations. The question at this point is what is going to happen to this entire information technology infrastructure. The following alternative scenario for the post-Olympic development that I am proposing, explains the reasons why I believe housing is not the optimum solution in Athens' case and how the information technology infrastructure should be used to leave behind a project with enhanced legacy.

Alternative Scenario for the Village

An Athens Technology Center (ATC) could be the result of the Village's post-Olympic development, taking full advantage of the existing information technology infrastructure. The ATC would include small start-up technology firms, branch offices of international companies, research groups and labs, and engineering companies. Of course, housing and commercial uses will be included as well. Before I analyze this scenario in depth, I present the reasons of why a technology center like this is necessary in Greece.

Greece is a country with a long cultural and political history in a strategic location among three continents. The last century's political and historical events such as World Wars, the Balkan and civil wars, and different political systems, led the country to experience major socioeconomic transformations, which have prevented it from following the changes that happened in Europe regarding industrial and cultural revolutions. Today, as an equal European Union member, Greece is following governmental policies targeting economic stabilization and sustainable development. The major economic sectors of the country are agriculture and tourism followed by manufacturing. The country is targeting further economic growth by creating incentives and promoting its unique characteristics to attract international and European investments (OMEP, 1996).

The reasons which have prevented foreign investment in Greece and Athens, its primary business center, are mostly related to the bad conditions of the transportation system, the inflexibility of the public sector and its domination over the private sector's development, and economic instability. The current political system, the country's close collaboration with the European Union, and the major construction in Athens' infrastructure systems are factors that are helping Greece and Athens change their image.

Although the private sector and the offering of professional services are developing rapidly, I believe that Athens is lacking a place to attract the development of e-business. Attracting this lucrative and growing sector would be the primary role of the ATC. The ATC would be the missing link between the effort of Greece to become a developed country and the actions that should be taken to achieve that goal. For Greece and Athens to enter the new economy and benefit from it there must be a place that would attract and accommodate people and business that can make it possible. The ultimate role of ATC would be to "jump start" the Greek high-technology sector, which would add a significant value in the developing economy.

For many people, proposals like this one are utopian because they believe that Greece is not a technologically developed country, has no experience in technology development and should focus on strengthening its economy in already developed sectors such as tourism and agriculture. My arguments oppose these beliefs.

First of all, Greece has a very well educated young population, which is looking for new opportunities. Also, the next generations, which will participate in the development of future business and ventures and in the decision-making processes, are receiving higher education in national universities and technological institutions as well as in internationaly accredited universities. These young professionals are ready to respond to any new challenge. Second, the sectors already developed have reached their peak and they do not offer new employment opportunities. This is evident from the 15% unemployment rate among professionals that is a permanent concern of the Greek government. Third, international companies, which have the experience in technology and new business development and are seeking personnel to accommodate their needs, can easily locate their branches in Greece, if specific conditions were to exist. Furthermore, the first attempts to develop new e-business ventures in Athens by local

private companies have been very successful and the demand for information technology related services is growing rapidly.

Another opposing argument could be that Athens already has research centers such as the National Institute of Technology and Research and many accredited universities that provide advanced research labs and well-trained human resources so it does not need to invest further in a new technology center. To that, I respond by presenting the well-known case of Silicon Valley. The United States of America has the most advanced network of accredited universities and research centers. This did not prevent the Silicon Valley phenomenon from occurring. The Silicon Valley, located in California, is the place where the most important technology companies are located. As those companies grew, the demand for related information technology services resulted in the development of a unique technology production system, consisting of various companies. These companies are collaborating with the existing system of universities and research centers to further develop solutions for their emerging technological needs and also to provide more and more employment opportunities to young professionals.

In our case, the ATC would have a function and character similar to that of Silicon Valley. It would not be developed to replace the existing research system but to enhance it, offering simultaneously opportunities to all professionals who are not related or do not have access to a university or who want to practice their entrepreneurial skills.

It is evident from all the arguments mentioned above that the ATC would be a useful solution to the Greek economy, which is searching for development solutions. The next question raised is: what are the incentives for international companies and venture capitalists to invest in a place like the ATC?

First of all the ATC would have an advanced information technology infrastructure, which is a major incentive for an IT company. Even for international companies that have second thoughts about investing in the ATC, the information technology infrastructure would allow them to "test" the center by installing a small office with minimum cost, which would function as their pilot project. The office would be electronically connected with all the other company's branches worldwide. A second incentive would be the availability of highly educated and skilled human resources. Companies seeking skilled young professionals for recruitment would have no problem

finding them among Athens' population. A third incentive is the climate, the good weather and the location of the ATC. Although an incentive like that sounds weak, it is true that location and environmental conditions are important factors in the decision process of a young professional. Consider Silicon Valley. The nice weather of California and the proximity to the international centers of San Francisco and Los Angeles have led many American professionals to relocate there. Athens, having a wonderful Mediterranean climate and being located just hours away from the most famous resorts in the Aegean, Mediterranean and Europe, is definitely an attractive place for international professionals. Furthermore, the location of the ATC close to the new international airport and the center of the city makes it more attractive to European and international companies. Another incentive would be the world-class design of the ATC space. Both built and open spaces, as the result of an advanced design for the Village, could be turned into modern offices and apartments attracted to new business. A final attraction for both companies and professionals would be the low cost of living in Greece, which would be helpful especially for start-up companies seeking to keep overhead low.

It is evident that the structure and the character of the ATC would be attractive to foreign investments and it would be the means to develop the new technology sector in Greece; a sector that will improve the current economic conditions.

All of these new businesses, which would consist of start-up technology firms, branch offices of international companies, research groups and labs, and engineering companies, will require specific uses. The design of the ATC would be based on the design of the Olympic Village so its creation would not need expensive transformations. The uses in the International Zone, restaurants, shops, conference rooms, medical center, and parking, would remain the same. Minimum rearrangements within the Olympic Center complex could turn it into a conference center, a valuable use for the ATC. As we have seen, the Residential Zone will accommodate 16,000 people. My proposal is to keep half of this space for housing and to turn the other half into office use. The enhanced design of the buildings would allow the merging of the athletes' units into larger spaces. Based on this logic, companies could rent one or more units and transform them based on their needs. Also they could have the opportunity to further expand their space, horizontally or vertically, based on their future needs. The buildings that will used for housing will

include 2-3 bedroom apartments and will accommodate commercial uses on their ground floors. Again the flexible design will allow for rearrangements without altering the volume of the buildings. The Olympic Park would remain a park and the ATC inhabitants and the surrounding communities would use its athletic facilities.

A significant dimension of the ATC scenario would be its social character and its compliance with Greek social policies, which as I have mentioned are of great importance in the decision making process of the post-Olympic development of the Village. On the one hand, the ATC would create many employment opportunities vital for the current economy. On the other hand, the concentration in the area of young people would steadily alter the whole image of the area by attracting new leisure and recreation activities as well as further housing development for the Thrakomakedones community. Ideally my proposal would support sustainable community development for the surrounding communities as residents who benefit from the new economic activities in the area create their own businesses.

The developer and manager of the ATC could still be OEK or any other public/private venture. No matter who the developer would be, it is important that the ATC be advertised before and after the Olympic Games. An advertising campaign that shows the post-Olympic development of the Village during the Olympics would definitely catch the attention of a market billions wide. The success of the ATC would be related to the attraction of foreign investments and companies. The best way to achieve this would be during the Olympics when international interest is at its highest.

To conclude this scenario, it is useful to compare the ATC with the OEK's housing community. OEK's solution for the post-Olympic development of the Village is based on the concept that housing, which will be developed for the Olympic needs, should stay housing and accommodate people from the surrounding communities. The advantages to this solution are the accommodation of the pressing needs for public housing in Greece and the cheap and easy post-Olympic development because of the flexible design of the Village. The disadvantage of this solution is that it does not take into account the potential use of the existing information technology infrastructure in the Village. On the other hand the ATC would take full advantage of the information technology infrastructure, which would be the basic incentive for attracting new business and IT

companies. The advantages of the ATC solution would be the economic benefits from investment in the technology sector, the creation of new employment opportunities, and the creation of a place that would push the development of the technology sector in Greece. Furthermore, additional advantages would be the improvement of the surrounding community's image and the steady growth of its residents from low-income to medium and high income. The disadvantage of the ATC solution would be the requirement of additional initial capital in effort, time, and money, which would be used for advertisement and partial redesign and adaptation of the Village after the completion of the Olympics.

It is evident that the ATC solution has more advantages than the housing solution. Also it is obvious that the advantage of the information technology infrastructure, which can improve the flexibility and functionality of the space and be used in multiple ways in new e-economy ventures, would make the ATC scenario more attractive and vital than OEK's housing scenario.

Conclusions

The way to enrich the legacy of the Athens 2004 Olympic Village is to take advantage of the advanced information technology infrastructure that will be implemented in the Village and the city of Athens. The deployment of the information technology infrastructure in the built environment would create flexible spaces that could easily accommodate multiple and different uses. The scenario for the post-Olympic development of the Athens' Village as a technology center rather than the development of housing, which was the solution in previous Villages, demonstrates the unique opportunities that the information technology infrastructure can offer.

From the first Village in ancient Olympia until the latest Village of the 1996 Atlanta Olympic Games, the evolution of the character and the role of the Olympic Village had always been connected to its post-Olympic development and the attempts of the host-city to attract international recognition and investment. The Athens Olympic Village, having the advantage of an advanced information technology infrastructure, can easily become a paradigm of successful post-Olympic development and add significant value to the

legacy of the Olympic Villages. Furthermore, successful post-Olympic development could promote the international image of Athens, which is important for the future development and prosperity of the city.

The Olympic Village has been growing throughout its history. It appeared as a temporary solution for accommodating the athletes' needs during the Games and developed into a necessary Olympic facility that requires advanced design and planning. Also it has become a significant urban element used by the host-city to further develop its urban fabric and accommodate emerging public needs for housing.

Athens can best add to the legacy of future Olympic Villages by an innovative use of the Village. This innovation could be realized through the maximization of the information technology infrastructure to help the city and the nation grow. If Athens chooses merely to follow in the footsteps of its predecessors, then little new will be learned. A bold step now can bring Athens proudly into the new millennium and create a new model for successful post-Olympic development.

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