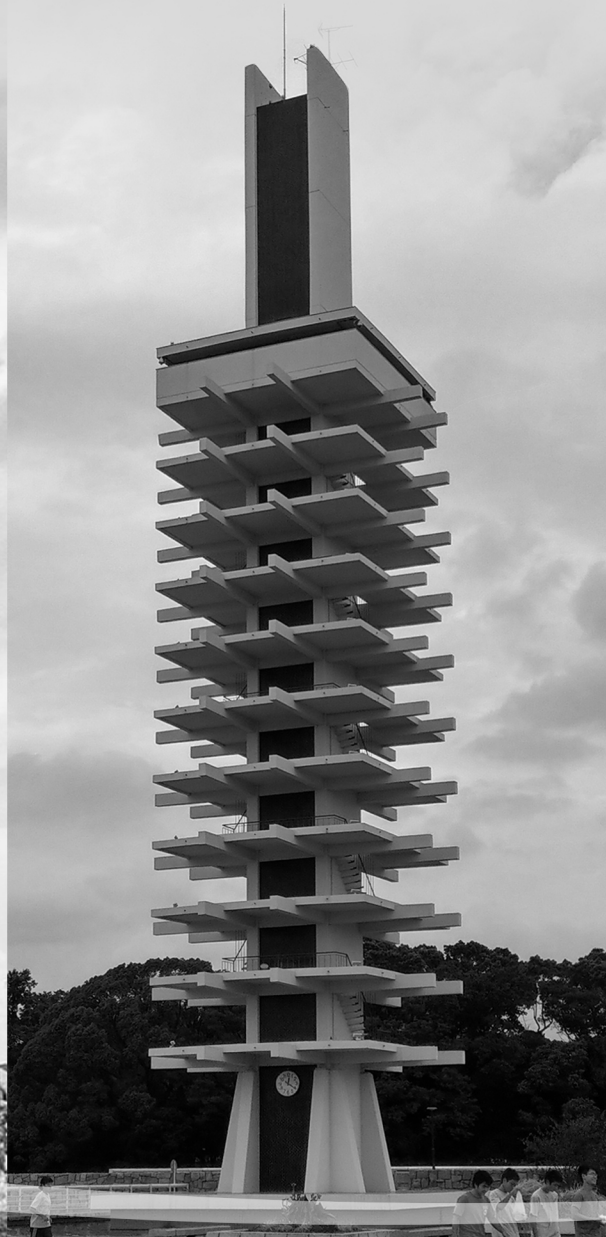


POST-OLYMPIC SUSTAINABLE DEVELOPMENT IN SOCIETY, ARCHITECTURE AND URBAN

A discourse on London, Tokyo and Beijing Olympic Events

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**Post-Olympic Sustainable Development In Society, Architecture And Urban
A Discourse On London, Tokyo And Beijing Olympic Events**

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Abstract

During more than 100-year Olympic history, Olympic concepts have been endowed new definitions in order to satisfy the updating demands raised from social reformation and development at global level. In 20th century, Olympic games were considered not only as a great opportunity for spreading great Olympic spirits, sharing ideas and ideologies, but also as a showcase of national comprehensive power. As a consequence, hosting an Olympic has been treated as great honor. However, in recent two decades of 21st century, Olympic seems to become a "hot potato", for some reasons, the interest of hosting Olympic Games has been decreased. Facing with this phenomenon, the International Olympic Committee(IOC) has to take actions to guarantee the Olympic continuity without lowering host requirements. At present, from IOC's point of view, one of the crucial points for solving crisis is to form sustainability guide and model for Olympic movement. This thesis is going to discuss about present Olympic sustainability developing condition with a specific focus on post-Olympic time sustainability from the perspective of society, architecture and urban. By making research throughout Olympic history, Olympic events, Olympic publications and case study about London, Tokyo and Beijing Olympics, in the end, attempt to provide more sustainable suggestions for the future Olympic Games and extract the sustainable Olympic model for post-game time from the case studies as reference for the future host cities.

Keywords: Sustainability, Olympic games, Legacy, London, Tokyo, Beijing.

Chapter 1

Research Background

1.1 Brief introduction of Modern Olympic Games

Olympic Games is initially born in ancient Greek around 2000 years ago. The name of the Olympic Games drives from the place where the initial event holds, Olympia. Nowadays it is a name for the district in Athens where the Olympic flame is collected every time. Unfortunately, after severe earthquakes in 522BC and 511BC¹, the Olympia was almost ruined into the flat which directly led to the ending of ancient Olympic Games.

In 1894, a French educator and historian, known as Pierre de Coubertin, united other 79 representatives from 12 countries to found the International Olympic Committee, which is recognized as the starting point of modern Olympic Games. Two years later, in 1896, the 1st modern Olympic Games was held in its ancient birthplace, Athens.

Since then, the Olympic Games soon became one of the most popular events in European continental and North American. As it is known worldwide, “Faster, Higher, Stronger” (Citius, Altius, Fortius) is the Olympic Motto since ever. Pierre de Coubertin borrowed the motto in 1894 (The official statement as Olympic Motto was in 7th Anvers Olympic Games in 1920) from Henri Didon’s speech to a youth sports competition he organized in Arcueil in 1891. Coubertin himself explained his understanding of this motto as the following:

“The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered but to have fought well.”

Coubertin’s statement, in fact, decides the central theme and main tone of modern Olympic Games which I interpret as “Participation and Experience”. Since then, the Modern Olympic Movement has been on its own path to keep exploring and practicing. And finally, grow from a sports competition event to a comprehensive event which has significant influence on various aspects in nowadays global life.

1.2 Research statement

On the 13th July of 2001, it was the date that all Chinese people would never forget in their lives. Beijing was chosen to be the host city for the 29th Summer Olympic games by the International Olympic Committee. Since then, this one of the most ancient countries on the planet began its Olympic era. Hundreds and thousands of events relating to the Olympic were organized all over the country’s territory, and citizens were active and enthusiastic about participating in all these events.

¹ Olympia OLYMPIA The Birthplace of the Olympic Games <https://www.athenskey.com/olympia.html>

In those years for Olympic preparation, the whole country was experiencing its golden time as well. Thanks to the large amount of construction for the Olympic games, the national economy has been growing at that time. In my impression, those preparation time was quite similar to a particular moment in China around the 1960s, even though I didn't go through the Chinese society in 1960s, by watching the documentary and listening to the life memories spoken by older generation, I could feel the social atmosphere in that so-called "The Great Leap Forward Era". Even though "The Great Leap Forward Era" was considered to be a disaster for the social economy and recognized as a failure movement with the left-leaning mistake, the society was in an unprecedented unity which means that everyone was caring about and contributing to the same target. This is what I concern about the similar social atmosphere for the Olympic preparation period. Many scholars made comments that China made full use of its national power for hosting the Olympic games and as a result, an Olympic Feast was perfectly presented to the world on 8th August of 2008. But there was one thing leaving me a deep impression. On the opening day, at the time of the opening ceremony, it was hardly to see people outside and in fact, most of the people were in front of the TV and watching the live show. It was one of the few events which could gather such universal attention in China nowadays. According to CSM Media Research, around 842million people watched the opening ceremony live, and the opening ceremony audience accounted for 68.8% of the country's total television population.²

After the Olympic games, when we were celebrating its success, some problems arose from hosting started to occur in gradual. It is a common phenomenon for all kinds of events, so is Olympic. When it becomes no less attractive spot for society, it might turn into a sort of burden for society directly or indirectly. Then some people started to deal with the issue and the debates of Post-Olympic development is more and more frequently mentioned recently.

Considering the word of Post-Olympic, date back to the use of prefix "post-." It is a word-forming element meaning "after," from Latin post.³ It is used to help define a period concept, such as post-World War II. While, in American English dictionary, it has the explanation that says "coming after in time, often as a rejection of or in reaction to something."⁴ In this case, the word of postmodernism has its philosophical meaning. In fact, Postmodernism describes the movement that developed in the 1960s across philosophy, arts, architecture, and so on and it is a departure from modernism.⁵ In the field of architecture, postmodernism architecture can be treated as revenge to modernism and internationalism. Architects in postmodernism were trying to express the individual personalities in their concepts and designs. Several branches of postmodernism in architecture were set up, such as

2 奥运会开幕式收视创新高 (2008 年 8 月 9 日北京) <http://www.csm.com.cn/Content/2016/10-28/1708101424.html> (Translated by Author.)

3 <https://www.etymonline.com/word/post>

4 https://www.collinsdictionary.com/dictionary/english/post_2

5 Definition of postmodernism in US English <https://en.oxforddictionaries.com/definition/us/postmodernism>

Ironie Classicism, Latent Classicism, Deconstructionist and New-Modernism. Nowadays, postmodernism has its significant effects on architecture design.

For the word “post-Olympic,” it is invented by referring to the usage of “post-” prefix. In my opinion, the first meaning is to define a specific time and respect to the primary definition of its usage as a prefix. Post-Olympic is an expression of the time after a specific Olympic game. Second, it can be explained as a reaction to the Olympic games. Nevertheless, I hardly can describe it as a revenge to Olympic as I wrote for postmodernism at this moment. At this time, post-Olympic should be relatively positive. It is the concept which is proposed to generalize all relating information dealing with different aspects after the Olympic games. In the discussion of this thesis, I would personally define the second meaning as a reconsideration and internal reformation to the Olympic itself. It is going to be neutral, dynamic and under control throughout every step of its development.

As for myself, the news of Beijing win for hosting 2022 winter Olympic game made me excited first, while also made me doubtful that why in a short gap time, Beijing is chosen to host such big-scale, worldwide event one more and it is also curious of me how China will react to this opportunity and challenge as well. Moreover, it has been already ten years after 2008 Beijing Summer Olympic Game. It is worthy of exploring how much the post-Olympic development has been realized since 2008 and what kind of effects it can make on 2022 Beijing Winter Olympic Games. As proposed in the publication of IOC, IOC Legacy Strategic Approach: Moving Forward, reporting the legacy of upcoming Olympic games regularly and capturing the legacy of past Olympic Games are suggested approaches for analyzing such topic.⁶ Looking for the recent examples all over the world and trying to learn from their experiences to make out some clues will help to figure out specific lessons and recommendations for having an acceptable post-Olympic sustainable development performance for future games. For this thesis, London, Tokyo and Beijing are selected.

⁶ IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.28

Chapter 2

Changing Attitude Towards Olympic

2.1 Olympic In 20th Century

Modern Olympic game history in the 20th century, I divide into 3 phases:

1.1894-World War I: Initial period

Modern Olympic was born and still took place in an informal situation, many problems such as lack of financial support, lack of qualified venues and facilities, lack of regulation and fairness, etc were exploded. It is rational and understanding for us that it was not easy to handle such a giant scale event with various interest groups(Countries, NGOs, Associations, athletes, coaches etc.). At this stage, the primary goal of out Olympic pioneers was to standardize the process, set rules and minimize weaknesses of modern Olympic Games.

2.World War I-World War II: Forming period

Because of wars, Olympic was interrupted without doubts. However, also, having this global event right after the war is an excellent chance to mitigate the sadness of War and call for global peace. With the development and experience gained during past decades, the game had already had a basic form. General outline and operating mechanism were almost fixed by this time. By having this foundation, the Olympic Games were on the right way for developing. Meanwhile, the IOC caught the chance to have a big step forward. The number of the member increased from 29 to 60, and with other sports associations establishment, IOC was recognized with the leadership of all and had more power for coordination working and decision making. During this period, IOC has stated its importance of the Olympic games as well as responsibilities.

3.World War II-1990s: Developing period under the political effect

After World War II, the Olympic Games came into a new era. During this period, the rapid development of Hi-tech and post-war economic blooming are main contributors to modern Olympic Games development. Not only facilities and venues have achieved a vast improvement, but also many new technologies were introduced for helping to judge, medicine checking(Dope) and many other aspects in Olympic session. Meanwhile, the sports category was also keeping increasing from 9 of 1896 to 33 sports and nearly 400 events.⁷ By having all of this contribution, the modern Olympic Games have become global focused.

However, there was a long cold war period that the Soviet Union and the U.S were in conflict, which, was also considered as the contradiction between western and eastern ideology. As a consequence, this global political issue was reflected in the Olympic Games matches as well.

⁷ Summer and Winter Games in total

Generally speaking, in this period, technology and cultural awareness promoted the development of the Olympics much more than politics. Instead, politicians were making use of the Olympics for their own goals.

2.1.1 A Showcase Of National Power

In the first half of 20th century, precisely speaking, before World War II, countries that benefit much from the first industrial revolution caught the opportunities to have their first National Olympic experiences and memories and do their Olympic practice under the guidance of Olympic spirit and motto. However, to some extent, the Olympic Games at that time were not as global as nowadays' one. At that era, countries which were selected to host Games were recognized as powerful ones with a worldwide reputation. As it is referred by IOC recently, during the candidature process, the host city/country should have several stages checked in general:

STAGE 1: VISION, GAMES CONCEPT AND STRATEGY

STAGE 2: GOVERNANCE, LEGAL AND VENUE FUNDING

STAGE 3: GAMES DELIVERY, EXPERIENCE AND VENUE LEGACY⁸

Before the World War II, when the modern Olympic was under exploration and development, the critical issue for selection was focused on governance and funding more. As it is shown in Figure 1, in total 15 Olympic Editions before WWII, except for the 1st edition in Greek for its Olympic Birthplace recognition, 11 out of 14 editions were held in Europe and rest of 3 editions were in American. All of those countries are defined as traditional capitalist power which was benefited from industrialization and capitalist market, that is to say, economic and political foundation was well set up, and it would guarantee the success host of Olympic Games.

Host City/Country	Year	Summer/Winter
Athens, Greek	1896	Summer
Paris, France	1900	Summer
Chicago, U.S.A.	1904	Summer
London, U.K.	1908	Summer
Stockholm, Sweden	1912	Summer
Antwerp, Belgium	1920	Summer
Paris, France	1924	Summer
Chamonix, France*	1924	Winter
Amsterdam, Holland	1928	Summer
St. Moritz, Switzerland	1928	Winter
Los Angeles, U.S.A.	1932	Summer
Lake Placid, U.S.A.	1932	Winter
Berlin, Germany	1936	Summer
Garmisch-Partenkirchen, Germany	1936	Winter

*first winter games in history

Figure 1. Host city/country before World War II

⁸ OLYMPIC GAMES CANDIDATURE PROCESS <https://www.olympic.org/all-about-the-candidature-process>

At that time, the Olympic works as an Elite club in which members are selected by their distinction and achievements. During this period, chosen to be the host city of Olympic games was considered as a great honor for the whole country and it is an excellent opportunity to show off the national power to the rest of world in a reasonable and peaceful approach. At least, the national economy and political stability are recognized as good enough for hosting such big scale and complex events.

After World War II, the Olympic Games had more chance to integrate more participation and new technologies. During this period, almost every Olympic game would enhance at least one new technology application or culture breakthrough in the event. For instance, on 1st of October 1964, nine days before the Tokyo Summer Olympic game, the world first commercial high-speed railway was officially open to the public and served for upcoming Olympic events. It has made a strong declaration to the world that Japanese science and technology have been back to the top, undoubtedly, it is a direct show of Japan national power.

Nevertheless, technology and science are part of national power. Social stability, economy, and even military power were still crucial points to be considered. As mentioned in the previous section, during the cold war period, ideologies from different political entities can have a significant influence on Olympic.

One of the famous events was the 1980 Moscow Olympic Games(XXII Olympiad). Due to the invasion of Afghanistan from the Soviet Union, led by U.S which was in the leadership of NATO, 65 countries and regions invited did not take part in the 1980 Olympics. Moreover, many of these are followers of the U.S. Obviously, calls for boycotts of Olympic events were not uncommon, four years prior, most of the nations of Sub-Saharan Africa boycotted the Summer Games in Montreal to protest the attendance of New Zealand after the latter sent its rugby team to play against the team from apartheid South Africa. In 1956, several Western European governments boycotted the games in Melbourne over the Soviet invasion of Hungary that year. Although the Olympic ideal was to place sport above politics, in reality, there were often political goals and messages promoted through the games.⁹

As the Olympics has gained significant attention globally, boycotts were used as an excuse and seemed to be a threat or protest to host countries. Because of the unstable international political background, Olympics could hardly keep its neutral statement and sometimes even became a tool for those countries who want to show off their presence of polity and military, national hard power.

However, apart from national hard power, sports achievements usually are considered as an essential index to

⁹ The Olympic Boycott, 1980 state.gov. U.S. Department of State. <https://2001-2009.state.gov/r/pa/ho/time/qfp/104481.htm>

measure national soft power. As Olympic already gain worldwide attention, being great winner of Olympic is the best way to declare its sports power and promote its own sports culture to the other countries, especially during the sensitive period, cold war, NATO countries, and the Soviet Union athletes were extreme competitors in games, athletes did not represent themselves and their countries, while their success or failure might have more relation to and reflection of ideology they were educated and performed. Without war, sports competition almost became the best option to present and judge different ideologies and social system.

Nevertheless, as for the hosting country, its national culture and achievements can be presented and promoted throughout game candidature, preparation and celebration. Hosting a successful Olympic is undoubtedly a perfect national “business card” for the country to the world. Similarly, the Chinese are keen to demonstrate their place as one of the world’s leading economies through the hosting of the Olympics in Beijing in 2008.¹⁰

No matter how much Olympic affected or was affected, negatively or positively by global situation, it does be the best platform for any country to show its national power, and as a consequence, the enthusiasm for bidding for the Olympics has never subsided.

2.1.2 An Event Calls For Peace

Olympism was revived in 1896, aiming at contributing to a peaceful future for humankind through the educational value of sport. The Olympic Movement brings together the youth of the world in a great sports festival, promoting peace, friendship, solidarity and fair play.¹¹ Indeed, call for peace is one of the Olympic goals, but Olympic itself sometimes would be used as a threat or chip by some countries, groups and even terrorism.

In modern Olympic history, many cases were reflecting its contribution to global peace. For the 1940 XII Olympic Edition, in 1936, Japan won the bid of 1940 Olympic games and was supposed to hold the event from 21st September to 6th October. However, one year after the bid, 1937, because of the Lugouqiao Incident in China, Japanese military showed their ambition of conquering whole Asia to the world. In July 1938, the representatives of the Chinese Olympic Committee protested against Japan’s aggression against China, undermining world peace and violating the Olympic spirit. It also requested the deprivation of the right to host the Summer and Winter Olympic Games in Tokyo and Sapporo in Japan. As a result, Japan lost its host. Instead, Helsinki was selected. However, due to the full outbreak of WWII, both XII and XIII Olympic Edition were canceled as well.

¹⁰ Lin, X. (2004). Economic impact of Beijing Olympic Games 2008. Proceedings of the 2004Pre-Olympic Congress, 6-11 August, Thessaloniki, Greece, 1, Athens, p. 100

¹¹ The United Nations and the Olympic Truce <http://www.un.org/en/events/olympictruce/background.shtml>

In this case, the cancellation of the right to host Japan by the International Olympic Committee can be considered as the greatest effort to maintain world peace under its limited capabilities of IOC.

After WWII, the world moved into the Cold War period. In 1956 XVI Melbourne Olympic games, athletes from eastern Germany(German Democratic Republic) and western Germany(Federal Republic of Germany) reunion at the first time, under the name of UNITED TEAM OF GERMANY. Even though the country was split and under the control of two separate mega countries with their strong ideologies. By making this union participation, it clearly expressed the people's willingness of peace, and the world also amplified this willingness through the platform of the Olympic Games.

Apart from those two cases mentioned above, many boycott events happened in Olympic games after WWII as well, the main reason for the boycott was expressed usually as the protest of conflicts/wars between countries. The boycott could be considered as anti-war behavior while considering the global political background, Cold War, it is hard to judge whether it was a real anti-war behavior or it was a political means of the mutual contest between the United States(NATO) and the Soviet Union. Nevertheless, competing in sports fields are much better than in battlefields.

In the 20th century, 1993 was the golden year concerning for Olympic movement. Olympic Truce was signed by all members of IOC, it is based on an ancient Greek tradition, dating back to the eighth century B.C. All conflicts ceased during the period of the Truce, which began seven days prior to the opening of the Olympic Games and ended on the seventh day following the closing of the Games, so that athletes, artists, their relatives, and pilgrims could travel safely to the Olympic Games and afterward return to their countries.¹² At this time, the United Nations were working together with IOC to make full use of Olympic Events for promoting peace worldwide.

Valiant attempts have consistently been made by the United Nations in an effort to bring peace and stability to the troubled regions of the world. That goal may still remain elusive, but if the Olympic Truce can help us to bring about even a brief respite from conflict and strife it will send a powerful message of hope to the international community.

——The United Nations and the Olympic Truce

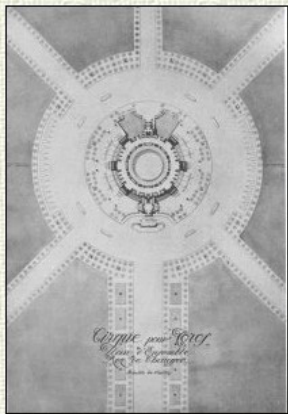


¹² The United Nations and the Olympic Truce <http://www.un.org/en/events/olympictruce/background.shtml>

In July 2000, The International Olympic Truce Foundation and the International Olympic Truce Centre were established to promote peaceful principles into concrete action. Nowadays, the Olympic event has played an essential and unsubstitutable role in the action of promoting peace.

2.1.3 A Promotor To Modern Architecture And Urban Development.

During the early year of modern Olympic, in order to combine both art and sports, from 1912 to 1948, there was a so-called Art Competition as a part of the Olympic Games created by Coubertin. This competition aimed to award for works of art inspired by sports and enhance the public awareness of artwork. There were five categories: Architecture, Literature, Music, Painting and Sculpture. Regrettably, due to the non-standard in judgment, criteria and many other details, the art competition was took placed by art exhibition after 1948. However, during the short 36 years, medals were awarded to outstanding candidates. In the aspects of Architecture and later subcategory of Town Planning(1928), nine gold medals, ten silver, nine bronze, in total 28 medals were awarded.



Circus for Bullfights, 1932



Skiing Stadium, Hermann Kutschera, 1936

Games	Gold project	Architect
1912 Stockholm	Building-plan of a modern Stadium	Eugène-Edouard Monod & Alphonse Laverrière
1928 Amsterdam	Olympic Stadium	Jan Wils
	Stadium at Nuremberg	Alfred Hensel
1932 Los Angeles	Cirque pour Toros Circus for Bullfights	Gustave Saacké, Pierre Bailly, & Pierre Montenot
1936 Berlin	Skiing Stadium	Hermann Kutschera
	Reich Sport Field	Werner March & Walter March
1948 London	Skisprungschanze auf dem Kobenzl	Adolf Hoch
	The Centre of Athletics in Varkaus, Finland.	Yrjö Lindegren (FIN)

Figure 2. Olympic Art Competition Architecture Gold Medal Winner List

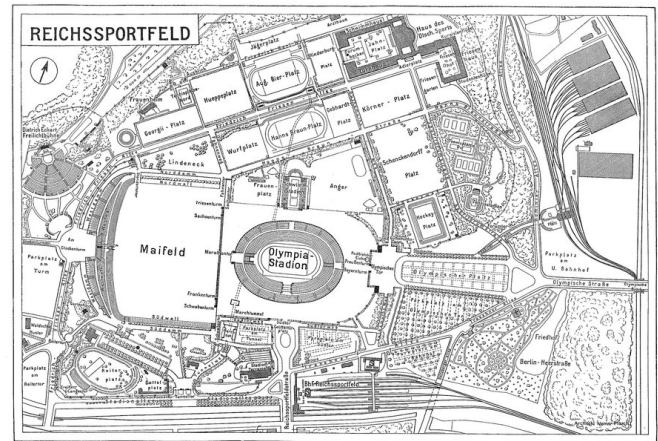
It is not difficult to make the connection between Olympic events and architectural and urban development, especially after WWII, almost every country attempted to recover from the wars rapidly, to make their national power showcase to the world and to be recognized as the member of the leading group in the post-war world. Coincidentally, Olympic events, which require substantial amount investment in infrastructure and venue construction, provide an excellent opportunity for governments to realize their post-war revival plans reasonably and for countries to demonstrate achievement in engineering, technology, and management by mass construction for Olympic.

For those countries which will host Olympic game firstly in their territories, usually can get full support from governance and people which can provide guaranteed finance and foundation for any ambitious construction during this period. It is a good chance for enhancing the national image by hosting. While in the aspects of architecture in the 20th century, modern architecture theories were born and developed in a dramatic way leading to various debts in architecture and urban planning. Thus, architects and urban planners could have a chance either to test the theory in practice or to gain more reputation by designing Olympic facilities, venues and areas.

One of the stories during the early half of 20th century concerning this topic is in 1936 Berlin Olympic Stadium, which is commonly known as Olympiastadion. In 1931, when IOC assigned the host of 1936 Olympic Games to Berlin, architect Werner March was ordered by Hitler to realize its plan, design and construction process. As for Hitler and Nazi power which came to power in Germany from 1933, using the Olympic Games for propaganda purpose was in priority. Undoubtedly, in the appeal to Hitler's taste, a masterplan which has a strong reflection of Nazi Architectural characteristic was proposed.

Nazi architecture is promoted by the Third Reich from 1933 until its fall in 1945 with the defeat of Hitler. It is characterized by three forms: a stripped-down neoclassicism; a vernacular style that drew inspiration from traditional rural architecture; and a functional style followed for major infrastructure projects and industrial or military complexes. Nazi ideology takes a pluralist attitude to architecture. However, Adolf Hitler himself believed that form should follow function and wrote against "stupid imitations of the past."¹³

In Werner March Masterplan, the clear characters of axis, symmetry, direct and simplicity are easily featured which effectively works for the practical use of land. Moreover, according to Hitler's thinking, megastructures with tremendous sense should be presented to excite people and other activities in society as well as it was considered as a symbol of the power of the Third Reich. Thus, the Olympiastadion took over this role at this moment. The simple and straight façade made by a series of columns in the neoclassical style of the stadium, which enhances the sense of order and feeling of being rich, followed Nazi architecture rule. It is an iconic project for Nazi architecture in sports facilities.



Lageplan reichssportfeld, 1936
Source: <https://www.archivverlag.de>

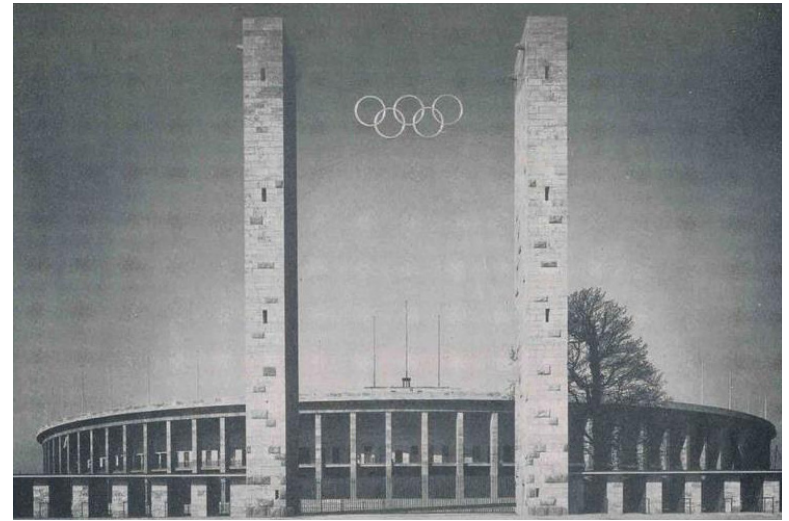
Albert Speer's later ambitious project of Germania(city) can treat as the influence of Werner March's masterplan.

¹³ Nazi architecture, Oxford Dictionary of Architecture and Landscape Architecture, 2006, p518

However, in the Third Reich period, politics and ideology had a strong impact on architecture design and urban planning. Speer is titled as “The Devils Architect”¹⁴ by film industry later, even though it is a dramatic reflection of his impression left to the world and marked in history, it demonstrated the facts that with the help of Speer, Hitler could make his Nazi concept realized and presented in the form of architecture and urban planning. Almost every Speer’s project could be recognized as an objective form of Nazi ideology. Politics has a firm control over architecture.



The Olympic Stadium in Berlin during the 1936 games.
Resource: Photograph © Wikipedia Olympiastadion



Olympiastadion, Berlin, 1936
Resource: <http://www.hahn-homepage.de>



Master plan of Berlin, 1938
Resource: <https://web.stanford.edu>

However, in Germany, after the fall of Hitler and WWII, the control over architecture and urban planning from political and ideological issue reached its peak. Berlin, the split capital city, was having endless tests, arguments and construction in the aspect of architecture and urban lead by different political groups. As a consequence, the city nowadays owns architecture styles and urban patterns which has the strong contradiction. The 1936 Olympic in Berlin was a sign of the beginning political-controlled architecture phenomenon. It let country and world recognize the power of architecture and planning. Moreover, the future design or planning

14 “Speer & Hitler: The Devil’s Architect” , Title of war film, 2005 Germany

in Germany was somehow affected, but with different ideologies in the following decades in the 20th century. The straight forward avenue together with the plaza injunction and megastructures has become sort of characteristic of Berlin urban pattern and references for other cities among the territory. Architecture can speak, especially in Berlin.

Another successful example in architecture and urban topics for modern Olympic case is the 1992 Barcelona Olympic Games. The fact is that the Barcelona model is still known for providing the blueprint for other cities bidding for summer games. As for Barcelona, 1992 Olympus was treated as a chance for urban redevelopment and improvement of infrastructure, which supplied a model that set a benchmark for prospective Olympic cities. Eighty percent of the necessary facilities were already available. Even the main stadium was renovated from the building for the 1929 international exhibition. At that time, this concept of reusing old structures was advanced.¹⁵

From the initial target of redevelopment and improvement in urban structure to the final long-term development strategy, by using the chance of hosting Olympic, Barcelona has successfully transformed itself into a sustainable city that focuses on street dimension, physical connection between the city and its people and a concept of Urban Marketing.¹⁶ The approach to hosting the Olympics was about transforming the city through its public space, pursuing an ambitious yet pragmatic urban strategy and the highest standards of design.

As a consequence, the gold medal of the royal institute of British architects in 1999 was given to the whole city instead of single people for its successful approach in urban transform driven by Olympic.

In summary, apart from the Olympic itself achievement, in the aspect of architecture and urban planning, even under the condition without very clear guide for design and consciousness of the importance of Olympic venues and area planning, changes in architecture and urban pattern arose merely and naturally by questioning how to prepare Olympic event in an effective and cost-optimized way, how to use Olympic to benefit natives. Indeed, the solution that was given by new architectural and urban planning approach is precisely a reflection of how Olympus Movement pushes the development of design and planning. Apparently, those changes with a large number of construction activities can be easily felt and memorized by the mass as an objective and direct performance of development. At the same time, many architects and planner were memorized in history by their works for Olympic as well. For the 20th century, the pride of hosting Olympic event creates identification, visions, and motivation for the areas.

¹⁵ Transforming Olympic cities – the Barcelona model, Alex Griffin, The RIAI Journal X, Mar.25 2018

¹⁶ Tourism and the city image: the Barcelona Olympic Case, Nadia Fava, Universitat de Girona, Spain, 2012

2.2 Olympic In Recent 20 Years

When the world went into the 21st century, Olympic also moved into a new era with a new topic and challenge. In the 21st century, the global situation is much more stable than in the last century. Thus, the Olympic movement can focus more on sports and related aspects. However, there are threats in aspects of economy, politic, environment, and society that affect the development of the Olympic movement. Apart from the traditional benefits that the Olympic movement can offer to the world, nowadays, people are turning to think over about the Olympic movement from a more dialectic and objective point of view.

This chapter will discuss mainly the phenomena that have been increasingly focused or firstly gained attention in recent 20 years, 10 Olympic games, in their bidding processes as well as celebrating moments.

2.2.1 Conventional benefits are maintained

There is no doubt that conventional benefits such as economic development, infrastructure improvement, urban regeneration, national reputation, promotion of national image and others, are maintained as advantages from the Olympic movement. There were two Olympics in this decade which have been benefited evidently by hosting an Olympic game. One example is the 27th Athens Olympic in 2004; the other one is the forthcoming Olympic held in Beijing in 2008.

Like the fact that Athens is the hometown for both ancient and modern Olympic movement and also described by many media, the 27th Athens Olympic Game was called “ The Olympic journey back to hometown.” It gained much focus all around the world, as it was reported by CCTV(China Central Television) that compared with the 3.6 billion television viewers of the 2000 Sydney Olympics, 3.9 billion people watched the Athens Olympics on television.¹⁷ Moreover, a large number of demands for the construction of infrastructure and venues during the period of preparation undoubtedly made a great contribution to the economic development in Greece.

From 2000 to 2004, the Greek GDP was keeping increasing and especially after 2002, the growth rate became much higher than it was before. One possible reason could be the acceleration of progress of construction in order to guarantee the on-time opening of the Olympic Games. Another useful index can reflect the contribution of the Olympic Games might be the “International Tourism, receipts.”

As it is shown in Figure.3 and Figure.4, Greek GDP and International Tourism, receipts share the same growth trend during 2000-2010, and both of two indexes had relatively quicker growth in 2004, the Olympic year. If

17 <http://2016.cctv.com/2016/07/29/ARTIgDdIBtlcK2X8kwrpJ9k160729.shtml>

we focus on the Pre-Olympic period and the short time after hosting, Greece was benefited as usual in history from Olympic.

Another typical example concerning about Olympic conventional benefits is 29th Beijing Olympic Game. For China, it is the first to host the Olympic Game, thus, following the routes of countries that hosted Olympic at the first time was reasonable for the Chinese government. One of the most important targets of hosting Olympic Game was the promotion of national image and brand of China at the global level. Not only the power in sports but also the power in many other aspects were supposed to be presented by hosting. The opening ceremony which had left a great impression on all the audience with its Chinese style in organization and performance was a typical case. Also, it is clear to perceive that the economy was increasing rapidly during the preparation period due to the same reason as many other countries. Figure.5 shows that the GDP growth rate was kept growing and reached a peak in the year of 2007, one year before the opening of Beijing Olympic.

However, apart from the conventional benefits in economy, the promotion of new technology and science also turns into a new phase. Personal thinking, in 21st century, technology development has shifted towards innovation more than intervention. One of the cases was the development of TV broadcasting in Olympic. The first TV broadcast Olympic was the 1936 event in Berlin. The live sense was shown to the public in Berlin via closed-circuit television. Then, in 1948 London event, BBC firstly broadcast Olympic to the whole country. In 1960 Rome event, the global broadcast appeared. Four years later in Tokyo event, the broadcast was via satellite.

The cases mentioned above indicated the process of broadcasting technology in the 20th century, with new technology invented, the scope and mode of live broadcast have changed. While, in the 21st century, broadcasting technology was already used well. IOC and host countries were interested in improving the quality of broadcast

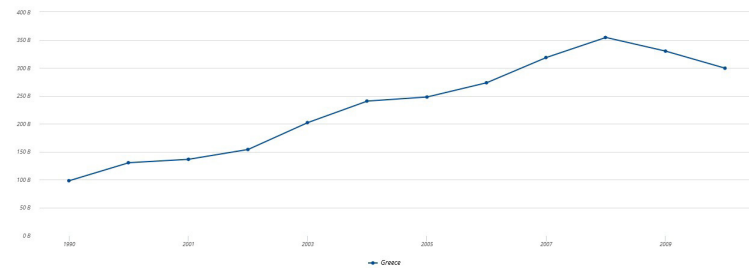


Figure.3 Greece GDP(\$) from 2000-2010
Data source: World Bank Data Bank

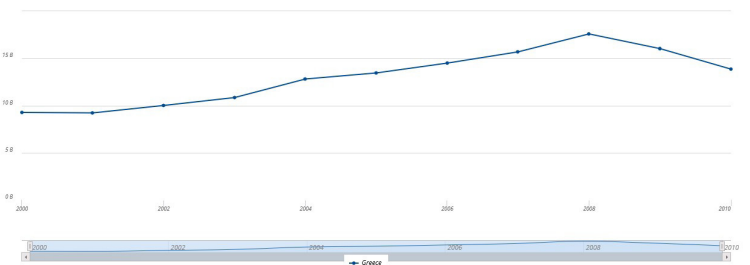


Figure.4 Greece International Tourism, receipts(\$) from 2000-2010
Data source: World Bank Data Bank

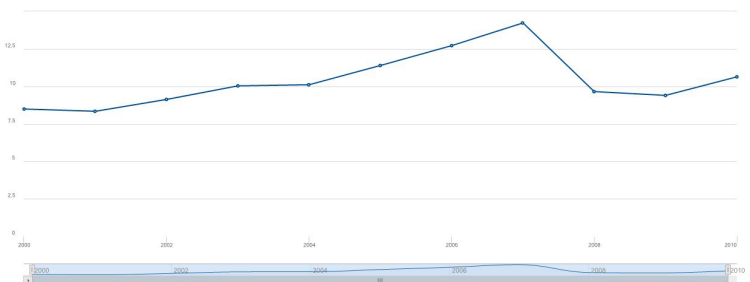


Figure.5 China Annual GDP Growth Rate from 2000-2010
Data source: World Bank Data Bank

which required the update of the existed condition. From HD live to 4K live, 2G net to 5G net, every outbreak in image resolution demands faster transmit speed. For the new era, technology is already there, but innovation based on it will never stop. No matter how the Olympic movement will develop in the future, its conventional benefits will undoubtedly contribute to global development as it did before.

2.2.2 Olympic “Hot Potato,” Crisis

Throughout the Olympic history in the 20th century, the boycott of participation sometimes can happen due to some political problem, especially during the cold war period. While, in the 21st century, the reason for the boycott not only of participation but also in the bidding process starts to change.

“Hot potato,” from the explanation of the Cambridge dictionary, it means that a problem, situation, etc. that is difficult to deal with and causes much disagreement. Nowadays, Olympic has a trend to face this crisis. Starting with the following table, it is the list of cities and countries that have withdrawn the bid for Olympic in the 20th century, including both summer and winter bid.

Host Year	Withdrawal City/Country	Withdrawal Reason
2000	Milan, Italy	Political Corruption ¹⁸
	Brasilia, Brazil	Unable to Pass IOC Inspection
	Tashkent, Uzbekistan	Apparently Unable to Build Suitable Facilities ¹⁹
2010	Bern, Switzerland	Negative Referendum Result
2020	Rome, Italy	Lack of National Government Support
2022	Oslo, Norway	Lack of Public Support
	Krakow, Poland	Negative Referendum Result
	Lviv, Ukraine	Local Political and Security Crisis
	Stockholm, Sweden	Political Shuffle
2024	Hamburg, German	Negative Referendum Result
	Rome, Italy	Over Budget
	Budapest, Hungary	Political Issue
	Los Angeles, U.S*	/

18 Milan Withdraws Olympic Bid, March.11 1993 http://articles.latimes.com/1993-03-11/sports/sp-1197_1_olympic-milan-withdraws

19 Tashkent withdraws bid for 2000 Olympics, UPI ARCHIVES, JAN. 24, 1993

2026	Sapporo, Japan	Earthquake Recovery
	Graz, Austria	Lack of Political Support
	Sion, Switzerland	Negative Vote Outcome
	Milan, Italy**	***

Info are collected mainly from GamesBids.com

*Los Angeles' bid was withdrawn on 2017-07-31, as a prerequisite to being awarded 2028.

**For the Milan bid for 2026, it was under discussion. But an approval from Government is issued, if Milan withdraw, the potential problem can relate to lack of national government financial support.²⁰

Figure.6 List of Withdrawn Olympic Cities and Country

It is surprised to be seen from the table, in 14 bids, the number of withdrawal was as many as 6 times. Apart from Sapporo's hit by natural disaster, Brasilia's failure in IOC Inspection, Tashkent's failure in facilities and Lviv's social crisis, the rest of 13 cities quit the bid process mainly because of political and financial problem. National votes or referendum were applied to decide Olympic bid in Bern, Krakow, Hamburg and Sion.

Berne:

"A referendum last week revealing that Berne voters did not want to pay for an Olympics has become a fatal blow to the city's 2010 Winter Games candidacy leaving only Pyeongchang, Salzburg and Vancouver as potential hosts."²¹

Sino:

"On Sunday almost fifty-four percent of voters across the Canton of Valais voted against funding CHF100 million (USD \$100 million) for a Sion 2026 Olympic and Paralympic Games bid, effectively ending the project that has been in development for almost two years."²²

The majority of citizens rejected the idea for bidding Olympic as most of people in those countries are too sensitive to the cost for Olympic. While in Rome, Oslo, Graz and Milan, lack of support either from public or government became the main reason for withdrawal.

Oslo:

"Concerns over the cost of hosting the Games, and the record \$51 billion associated with the Sochi 2014 Games,

²⁰ Italian government says it will not provide financial support to Milan-Cortina 2026 Olympic bid, Robert Livingstone, Sep.28 2018

²¹ Berne Officially Withdraws Bid, GB Editor, Sep.27 2002

²² Voters Defeat Sion 2026 Olympic Winter Games Bid Ending Swiss Dreams, Robert Livingstone, Jun.10 2018

reportedly played a key part in Norway's rejection of Oslo's bid. ”²³

“Oslo dropped its bid for the 2022 Games after the Norwegian government declined Wednesday to provide financial backing.”²⁴

“After months of holding on despite lack of public support, Oslo's bid to host the 2022 Olympic Winter Games was finally crushed Wednesday after Norway's majority Conservative party failed to support the bid through a parliamentary vote.”

Rome:

“Rome's half-run 2024 Olympic and Paralympic Games bid campaign spent 13 million euros (USD \$14.2 million) before Italian Olympic Committee (CONI) President Giovanni Malagò was forced to suspend operations last week. “Around 13 million euros was spent. Expenditure that cannot be recovered” Malagò said to Radio 24.”²⁵

Milan:

“An Italian Olympic Winter Games bid set to be named Tuesday has already received approval from the nation's government.” Published Jul 7, 2018²⁶

“Italy's undersecretary responsible for sport, Giancarlo Giorgetti, said Thursday that his government will not provide financial backing for any proposed 2026 Olympic Winter Games bid....The government's attitude to this type of proposal, as I (Giancarlo Giorgetti) have reiterated to all stakeholders and to CONI (Italian Olympic Committee), is that these proposals will have the support of the government but not the economic support of the government...” Published Sep 28, 2018²⁷

From all the quotations and facts listed above, no matter if it is political problem or not, all things seem to direct to one crucial point, that is money. Olympic Bids can hardly survive the backlash of growing populism in Europe and the belief that hosting the Games amounts to a bloated financial burden.²⁸

As it is known that after the global economy crisis in 2008, the Western world is becoming much more sensitive

23 Norway, IOC To Analyze Oslo's Bid Demise, GB Editor, Oct.10 2014

24 IOC loses another candidate as Oslo's 2022 bid is crushed, GB Editor, Oct.1 2014

25 Rome's Aborted 2024 Olympic Bid Cost Over \$14 Million, Robert Livingstone, Oct.20 2016

26 Soon-To-Be-Named Italian 2026 Olympic Bid Wins National Government Approval, Robert Livingstone, Jul.7 2018

27 Italian government says it will not provide financial support to Milan-Cortina 2026 Olympic bid, Robert Livingstone, Sep.28 2018

28 Rome's 2024 Olympic bid exit illustrates what's wrong with bid process, Robert Livingstone, Dec.31 2016

to budget, expenditure, tax, debt and other financial indexes. Moreover, some bad examples had directly exposed how the weaknesses and unaffordable failure due to an uncontrolled Olympic Game can affect one country's future development, one of the examples is Greek. The failure of Athens's post-Olympic maintenance and planning, together with over-budget game preparation were somehow supposed to take responsibility to the Greece debt crisis later on. Lack of feasible legacy plan made some venues into ruins after the game, in another word, all the investment on venues construction has become one-off consumption without a lasting profit.

Another example is Rio 2016 Olympic, it was reported that the cost of Rio Olympic was around 12billion dollars and it was at the time that Brazilian economy was in recession period.²⁹ Some protests against Rio 2016 were reported as well during the preparation time. During the celebration time, the Olympic reached an acceptable quality, while, short after the game, Olympic legacy was lying in ruins.

For ordinary taxpayers, it is acceptable to watch senses like this. It spreads a signal to the mass that huge amount of time, resource and money were wasted for a 20- day-long event. When the people who live in areas where governments might show an interest to bid for Olympic receive the information like this, it is hardly for people to keep their enthusiasm for bidding, instead, people's anxiety may be raised naturally as well, especially under relatively weak economic environment. Thus, voting for the withdrawal of Olympic bid becomes the last chance for those who want to defend.

Another consideration is that some statistics show that nowadays Olympics are unable to gain enough profit to cover the whole investment and face the heavy burden of venues maintenance cost. For instance, the 2004 Athens Olympic Games spent 12 billion US dollars and had a deficit of 3 billion US dollars. Moreover, Beijing Olympic Games had an expenditure of 5.686 billion US dollars

²⁹ Brazil's \$12 billion Olympic legacy lies in ruins, Dave Burke, MAILONLINE, Feb.20 2017



The abandoned beach volleyball arena in Athens
Source: AP



There was no viable long-term plan for these abandoned Olympic baseball stadiums
Source: Bloomberg

and a financial loss of 2.707 billion US dollars in the end.³⁰

In my opinion, the appearance of bid withdraw is understandable and reasonable in some cases, as many recent cases have proved that Olympic does not always benefit the development in all aspects. People have the right to



Aquatics Stadium
Resource: REUTERS



Maracana Stadium
Resource: AP

say NO to Olympic. Thus, Olympic now is facing with its bigger challenge as well as crisis ever, less and less interest for the host. As a consequence, for the election of 2024 and 2028 summer games, in order to avoid the embarrassment of no one to host the Olympic Games, the Olympic Committee had to make adjustments. Paris was selected for 2024 summer Olympic games and Los Angeles, which was the only rest candidature in 2024 bid and even gave up its bid in the end, was invited or assigned directly by IOC to take over the host for the next Games in 2028.

In conclusion, every coin has two sides; it is normal that the Olympic Movement will face various difficulties in this new era that everything is constantly dynamic. Thus, IOC was starting to think over about the Olympic Movement in the new era, and trying to find solutions in different aspects

2.3 Conclusion: Olympic can affect more than expectation

To summarize the development path of Olympic in the 20th century, it is like a child who was raised by all participants, countries, groups, NGOs, etc. and growing rapidly. Fortunately, through one century's development accompanied by quantities of problems and difficulties, at the end of the 20th century, the Olympic movement has matured. Moreover, Olympic focuses not only in sport, but also sets sport as a core driver and tries to establish the relation with

other social aspects to sports such architecture design, infrastructure construction, promotion of social welfare and so on. As a result, by having the Olympic platform, the concept of comprehensive develop is spread worldwide.

30 Sustainable Development in the 2012 London Olympic, Kang Ying, Urban Planning International, 2015, 30(2):112-118.

In general, Olympic speeds up the development pace worldwide in the 20th century.

While moving into the 21st century, there is much less threaten from war and unstable societies to the Olympic Movement. However, the financial issue starts to become the focus point in Olympic Movement, no matter what kind of reasons for withdrawal, in the end, it will come conclusion to the topics related to the worry and the uncertainty of cost and budget. Personally speaking, the critical issue for solving the crisis is to figure out the solution for ensuring economic sustainability throughout the whole process of Olympic Event. As a consequence, IOC must enhance the role in the Olympic Movement to contribute more efforts for “Saving Olympic.”

IOC had perceived the demand for sustainable development at the end of the 1990s and considered it to be a possible effective concept to guide the new development path of the Olympic movement in the 21st century. A comprehensive and sustainable development concept should be remembered by all members of IOC, and it will cover bid process, game preparation, game celebration, post-game legacy and all the other fields related to Olympic. However, from concept to implementation, there is still a long way to pass. However, I do believe that under careful practice, instant adjustment, effective control, and appropriate supervision, the Olympic Movement can come over the challenges and crisis. In the 21st century the Olympic has been given more missions to promote a better future.

As a student who has been studying architecture and urban for some years, I do understand the power of architecture and urban planning proposal. Any realization of building and the urban project will have a direct and objective impact on the site, surroundings, and residence live around, and these projects are supposed to be last and in use by generations for decades at least. There is no doubt that Olympic, such big scale event, definitely requires many proposals of venues, district planning projects in another word, Olympic can be treated as a catalyzer for urban transformation which probably leads to social transformation as a result. I could comment that the district changes arose by the construction of Olympic venues and areas will give feedbacks fast more than any other aspects. Thus, propose, design and monitor in careful are compulsory. Nowadays Olympic is becoming a comprehensive event more than a sports event, as a consequence, it will make more influence in our society. If Olympic can set an excellent sample for sustainable development, surely the sample will be spread and copied worldwide. Olympic could have a great contribution to the realization of sustainable development as if its sustainable model is in success. Nevertheless, nowadays, Olympic is becoming more and more economically sensitive, and the crucial point for solving the present Olympic crisis is to make solutions to secure economic sustainability and make every coin valuable.

Chapter 3

Sustainability For Contemporary Olympic, Concepts And Strategies

An old Chinese saying: Misfortune, that is where happiness depends, while happiness, that is where misfortune underlies. The crisis is not always negative. When Olympic event has become a hot potato, it occasionally offers a chance to force the Olympic Movement to start an inner transformation. Now, moving towards Olympic sustainability is in priority. There are many discussions about sustainability in Olympic, four publications are selected for presenting a brief analysis of the developing process of sustainability concept in Olympic.

Dating back to the end of 20th century, IOC had realized that they should find a new guide path and turn their focus from a sports event to an event for promoting comprehensive development worldwide by making full benefits of sports. Even though this awareness came up much earlier than the appearance of the Olympic crisis, unfortunately, it was developing slowly, and the implementation was usually at a low level sometimes. Athens was a negative case. During the UN Conference on Environment and Development (UNCED), known as “Earth Summit” as well, in Rio de Janeiro in 1992, most of the world nations have committed themselves to the pursuit of economic development in ways that would protect the Earth’s environment and non-renewable resources.³¹ As a consequence, sustainable development has been officially signed as the central theme at the beginning of the 21st century.

However, promotion and application of the concept of sustainable development are responsible for all individual and collective actors in every field. Olympic movement and IOC, as the top leadership entity in global sports aspect, must take responsibility for this general global theme. In 1994, the IOC officially recognized the importance of environment and sustainable development by setting it as the third pillar of Olympism together with sports and culture. At the same time, IOC added in Olympic Charter mission statement: “to encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly; to promote a positive legacy from the Olympic Games to the host cities and host countries;”³²

During the following years, various documents, articles, and books having discourses on the sustainable issue are published. In this chapter, three main important documents from IOC which help to figure out the developing direction for the Olympic Movement in the 21st century are introduced and discussed.

Olympic Movement’s Agenda 21, Sports for Sustainable Development

Olympic Agenda 2020 20+20 Recommendations

IOC Legacy Strategic Approach: Moving Forward

³¹ Olympic movement’s agenda 21, sports for sustainable development, IOC, 1993, p.17

³² IOC Olympic Charter, Chapter 1, Rule 2, Paragraph 13 and 14, IOC, Aug.2 2015

3.1 Olympic Movement's Agenda 21, Sports for Sustainable Development

Olympic Movement's Agenda 21, Sports for Sustainable Development, is officially published by IOC as a concrete proposal in the context of the Rio Declaration.³³ As stated by UNCED Agenda 21, this document serves as a blueprint for each government to draft its Agenda 21, so did IOC. According to the Olympic Charter, the Olympic goal is to contribute to building a peaceful and better world. For this reason, the International Olympic Committee has decided that the Olympic Movement should have its own Agenda 21.

In the context of the document, three major aspects were especially focused: Improved socio-economic conditions; Conservation and management of resources for sustainable development; and Strengthening the role of major groups.

In the first section, improved socio-economic conditions, unsustainable consumption pattern without consideration of burdens on the environment is stated as the problem, IOC would like to use Olympic event as a stage to present the examples of the sustainable consumption pattern and educate young generations. One suggestion is to use sports equipment produced from non-polluting or recycled materials and manufactured in ways which economize on raw material and energy, traditional and local materials are encouraged.³⁴ At the same time, all sustainable strategies should respect to specific economic and regional situation. As a consequence, in Agenda 21, IOC also strengthens that sports facilities and Olympic infrastructures (Accommodation, broadcast center etc.) will be built or converted so as to ensure their harmonious integration into the local context.³⁵ Moreover, it will be able to provide a boost to local housing strategies, better conditions for sustainable development.

In the second part, conservation and management of resources for sustainable development, A Prior Environmental Impact Study is proposed to ensure the respect for the cultural, social and natural environment when in building or conversion or planning the Olympic event. Naturally, A Post-Game Environment Impact Assessment is also necessary to be conducted to estimate the level of implementation of those strategies promised at the bidding process. Dealing with sports facilities, venues, and infrastructures, several points are highlighted:

- (1) Protection of conservation areas, countryside, heritage and natural resource as a whole
- (2) Minimize the environment impact
- (3) Best possible use of existing sports facilities by improving plan
- (4) Create new facilities only if necessary

³³ Olympic movement's agenda 21, sports for sustainable development, IOC, 1993, p.19

³⁴ Olympic movement's agenda 21, sports for sustainable development, IOC, 1993, p.27

³⁵ Olympic movement's agenda 21, sports for sustainable development, IOC, 1993, p.30

- (5) Comply with local legislation and fit in with local context
- (6) Limit the use of land for highways and parking areas

In the last section of this publication, strengthening the role of major groups, Agenda 21 focuses on women, young people, and the indigenous population. It is a signal saying that Olympic would like to take more responsibility for promoting Social Fair, Sexuality Fair, and Education in the 21st century.

To sum up, in short, Agenda 21, IOC's last publication related to sustainability in the 20th century, formed a basic concept for guiding a sustainable Olympic movement under the new global situation, even though it is somehow still general, at least the awareness of sustainability has been planted in the earth of Olympic movement.

3.2 Olympic Agenda 2020 20+20 Recommendations

Published in 2014, Olympic Agenda 2020 is another milestone document to further consolidate the context of sustainable Olympic and figure out strategies of changing Olympic under new global situation. "If we want our values of Olympism - the values of excellence, respect, friendship, dialogue, diversity, non-discrimination, tolerance, fair-play, solidarity, development and peace - if we want these values to remain relevant in society, the time for change is now."³⁶ As stated by IOC president Thomas Bach, it is the right time and reasonable opportunity for the Olympic movement to make some changes to take reactions to the challenges in the new era.

Agenda 2020 provides 40 recommendations which cover almost all the aspects of Olympic section, including bidding procedure, athlete rights, game operation, and management, Olympic partnership, cooperation and governance, and other social topic concerning about education, youth and women. Among the total 40 recommendations, I would like to point out three of them here.

First: Recommendation 2³⁷

Evaluate bid cities by assessing key opportunities and risks: the report of Evaluation Commission to present a more explicit risk and opportunity assessment with a strong focus on sustainability and legacy.

Recommendation 2-2: The IOC to consider as positive aspect for a bid: the maximum use of existing facilities and the use of temporary and demountable venues where no long-term venue legacy need exists or can be justified.

Recommendation 2-4: The IOC to clarify the elements for the two different budgets related to the organization of the Olympic Games: long-term investment in infrastructure and return on such investment on the one hand, and the

³⁶ Speech by IOC President Thomas Bach on the occasion of the Opening Ceremony, 127th IOC Session, Monaco, Dec.7 2014

³⁷ Olympic Agenda 2020: 20+20 recommendations, IOC, 2014, p.10

operational budget on the other hand. Furthermore, the IOC contribution to the Games to be further communicated and promoted

Recommendation 2-6: The commission to benefit from third-party, independent advice in such areas as social, economic and political conditions, with a special focus on sustainability and legacy.

Second: Recommendation 4³⁸

Include sustainability in all aspect of the Olympic Games: the IOC to make a more proactive position and leadership role with regard to sustainability and ensure that it is included in all aspects of the planning and staging of the Olympic Games.

Recommendation 4-1: develop a sustainability strategy to enable potential and actual Olympic Games organizers to integrate and implement sustainability measures that encompass economic, social and environmental sphere in all stages of their project.

Recommendation 4-2: assist newly elected Organizing Committees to establish the best possible governance for the integration of sustainability throughout the organization

Recommendation 4-3: the IOC to ensure post-Games monitoring of the Games legacy with the support of the NOC and external organizations such as the World Union of Olympic Cities (UMVO)

Third: Recommendation 5³⁹

Include sustainability within the Olympic movement's daily operations: the IOC to embrace sustainability principles.

Recommendation 5-1: the IOC to include sustainability in its day-to-day operations

- The IOC to include the sustainability in its procurement of goods and services, as well as events organization (meetings, conferences, etc.).
- The IOC to reduce its travel impact and offset its carbon emissions
- The IOC to apply the best possible sustainability standards for the consolidation of its Headquarters in Lausanne

Recommendation 5-2: the IOC to engage and assist Olympic Movement stakeholders in integrating sustainability within their own organization and operation by:

- Developing recommendations
- Providing tools: e.g. best practice and scorecards
- Providing mechanisms to ensure the exchange of information between

³⁸ Olympic Agenda 2020: 20+20 recommendations, IOC, 2014, p.12

³⁹ Olympic Agenda 2020: 20+20 recommendations, IOC, 2014, p.12

Olympic stakeholders

- Using existing channels, such as Olympic Solidarity, to help and assist in implementing initiatives.

Recommendation 5-3: to achieve the above, the IOC to cooperate with relevant expert organizations such as UNEP.

From my point of views, these three recommendations mentioned above provide relatively more detail information of sustainability strategies. Its contents cover sustainability strategy in all social, economic and environmental aspects, which align with the definition driven from 2005 World Summit: sustainable development goals: economic development, social development and environmental protection.⁴⁰ Among the recommendations above, 2-2 and 5-1 mainly refer to environmental protection. 2-4 and 4-1 mainly refer to the economic aspect. The rest are mainly talking about governance transparency, monitoring, organization cooperation, etc. such kind social aspects (I consider political-relate principles are under the category of social sustainability). Since then, the sustainable strategies for the Olympic Movement have been given clearer categories and target:

- Environmental aspect: Minimize consumption and emission
- Economic aspect: Assessing investment and controlling budget
- Social aspect: Integrating resources and using the power of governance

Considering a further step in architecture and urban aspect which is undoubtedly always related to all social, economic and environmental aspects, what architects and planners can do is to make proposals as environment-friendly and economy reasonable as possible to convince various stakeholders involved in Olympic Games to realize. While, a sad truth is that architects and planners usually play a passive role in decision-making process, not only in Olympic, but also it has been always like this in history. As a consequence, the crucial point is to raise the awareness of the importance and necessity of sustainability in stakeholders' way of thinking.

Dating back to 20th century, Brundtland Commission defined that "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs." At present, with large quantities of contribution from designers and IOC advocating, many host cities and stakeholders, mainly referring to the partnership, have had an awareness of sustainability and already practiced Brundtland's rule in game preparation session. In the construction of infrastructure and venues, many sustainable concepts are induced into design, such as the usage of temporary structure to enlarge venue capacity temporarily for game time, Sydney Olympic Park Aquatic Centre(Sydney 2000), Bird Nest(Beijing, 2008), London Bowl(2012

⁴⁰ United Nations General Assembly (2005). 2005 World Summit Outcome.

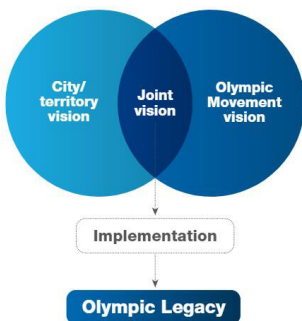
London), making use of advanced technology and design method for energy saving such as the usage of solar panel, passive ventilation design for venues and many other similar technological approaches are more frequently applied recently and often treated as “selling points” by hosts to embody their effects on sustainability. Nowadays, host countries/cities have paid careful attention to the preparation and celebration phase in one Olympic Event for presenting an excellent image to the world. However, a brave beginning sometimes becomes a weak ending, today’s problems often occur after the celebration. As a result, IOC has its plan to strengthen the importance of the Olympic Legacy.

Personally speaking, there is a feeling of me that no matter what we do now, it is unavoidable to consume resources of future generations. If it is the truth that we are not able to change, then what we create today must leave the meaningful value as much as possible for future generations, as everything we create now is based on the resources that we are borrowing from next generation. Olympic legacy will stand a long time no matter what will happen after the celebration. Thus we must take responsibility to make legacy into something positive for future life. As for designers and planners, it is an opportunity as well as the challenge.

3.3 IOC Legacy Strategic Approach: Moving Forward

IOC Legacy strategic Approach: Moving Forward is another IOC publication in 2017 that recently consolidates contents of post-Olympic sustainable development strategies and especially have a focus on Olympic Legacy. It aims to embed legacy throughout the whole Olympic Games lifecycle, document, analysis and communication, legacy celebration, and the establishment of strong partnerships.

Olympic legacy is the result of a vision



THIS NEW APPROACH HAS PARTNERSHIP AND FEASIBILITY AT ITS HEART. OUR GOAL IS TO MAKE THE OLYMPIC GAMES BEST FIT THE LONG-TERM NEEDS AND GOALS OF THE HOST CITY.

—THOMAS BACH, IOC PRESIDENT.

“Olympic legacy is the result of a vision. It encompasses all the tangible and intangible long-term benefits initiated or accelerated by the hosting of the Olympic Games/sports events for people, cities/territories and Olympic Movement.”⁴¹ In the document, it describes the legacy is the result of vision, which originates from the alignment of the Olympic Movement core vision of “building a better world through sport” with the vision of a city(or a territory) of what a “better world through sports” looks like in a specific place and time.⁴² It is a joint of city vision and Olympic vision. Also, it articulates the property of legacy for Olympic: tangible and intangible long-term

41 IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.2

42 IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.13

benefits.

Tangible legacy sometimes is also called as “hard” legacy which refers to something that can be seen, touched and used, such as sports facilities, infrastructure improvement, venues, leisure parks and so on. It is the common stage that designers are always involved in the as common sense that hard legacy is usually created by physical creation or transformation at the architectural and urban scale. In the past time, we seldom mention the word of legacy, as mention in the beginning part of this thesis, we were taking the chance of hosting Olympic and were enthusiastic to build up new remarkable structures to stimulate the national economy development as well as showing off the national power, reusing the old structures were not in plan. In the whole 20th century, honestly, we have constructed much more than demanding, nowadays, Olympic does not function as catalyzer that much as it did. Time of expansion has gone, and now it is the time thinking of maintaining and shrinking.

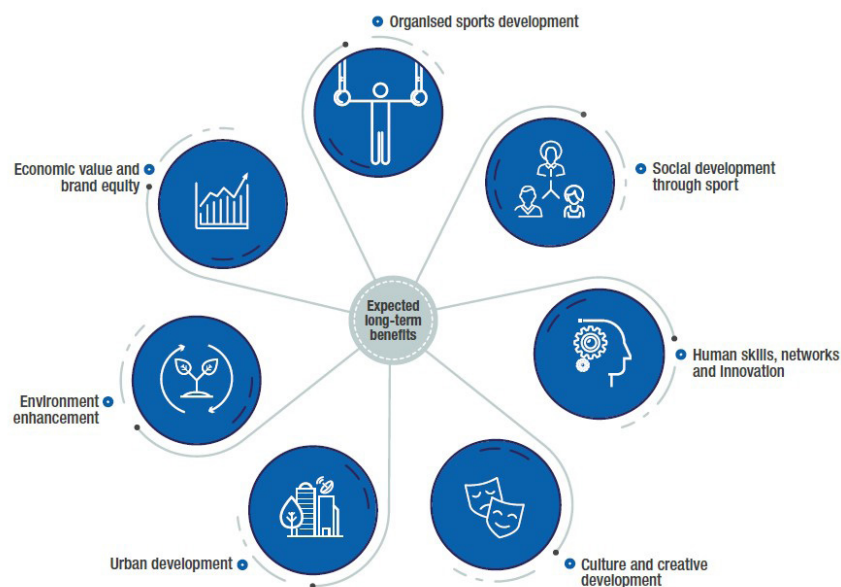


Figure.7 Expected long-term benefits from the Olympic Games
Source: IOC Legacy Strategic Approach: Moving Forward

Intangible legacy, “soft legacy” is another existing form of legacy, which refers to something subjective that is regarding actual benefits to people and society, such as attitudes, concepts, skills and so on, something immaterial. It is not easy to identify or define neither measure. An example of intangible Olympic legacy is in 1992 Barcelona Edition, and it is the first “Smoke-free Games,” which set a precedent for future anti-tobacco laws in Spain.⁴³ Another example is the 2006 Turin Winter Olympic Edition, the Olympic athlete village, Nowadays, intangible legacy plays a more critical role in social aspects.

According to IOC, the expected long-term benefits from the Olympic Games have seven categories including environment enhancement and urban development which have more connection to tangible legacy.

For benefit from environment enhancement, it mainly focuses on the following 6 points: 1) Air and water quality

43 A New Chapter Begins: Olympic Legacy/International Olympic Committee, Olympic review: official publication of the Olympic Movement, No.197 (April-May-June 2018), p.30

2)Transition to low-carbon technologies and processes 3)Open-air leisure areas and greenspace 4)Biodiversity protection and restoration 5)Innovative environmental management solutions 6)Enhanced sustainability and environmental awareness. Meanwhile, there are 4 main benefits in urban development: 1)Transport and mobility infrastructure development(extension of a metro or train system, airport upgrade, more walkable and cyclable cities) 2)Basic urban infrastructure(housing, water, sanitation, solid waste disposal, healthcare and other public amenities) 3)Advanced urban service and infrastructure(technology, telecommunications, smart city grids, smart building, etc.) 4)Upgraded/new venues for multiple social/economic uses.⁴⁴

All benefits list above are the final goals of sustainable approaches and strategies in architecture and urban. For tangible legacy, it should not only serve for Olympic celebration, but their lifecycles are also necessary to be designed before starting construction, controlled and monitored under construction and afterward in-use time. Thus, based on IOC, the legacy plan should involve in all three main phases of the Olympic event: candidature process, Olympic game preparation and post-games.



Figure.8 Legacy involvement

Source: IOC Legacy Strategic Approach: Moving Forward

Especially in the second phase, games preparation period, IOC has to participate in city governance for promoting sustainable design, securing financial funding and estimating dynamically. In order to guarantee the effectiveness of legacy plan, starting from 2020 Tokyo Edition, all host cities will apply the legacy reporting framework which requires hosts to present the identification of legacies in early years of preparation and report the inventory of long-term benefits for people, the city and the Olympic movement on a regular basis through the lifecycle. Also, a series of tools and methodologies which are developed by Prof. Holger Preuss from Mainz University are introduced by IOC for helping measure legacy performance and explain legacy from causality and change.⁴⁵ There is an impressive figure from Prof. Holger Preuss to briefly explain the relation among image, infrastructure, wealth, poor and positive or negative legacy. (Figure 9) It defines that positive legacy should locate in the positive axis and will contribute to

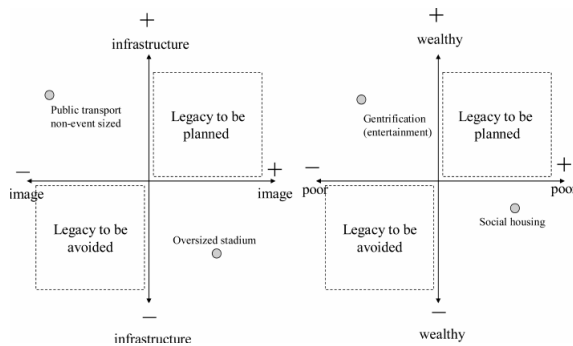


Figure.9 Conflicts of positive and negative legacies

Source: Preuss, Holger. (2007). The Conceptualisation of Measurement of Mega Sport Event Legacies. Journal of Sport & Tourism. 12. 207-228.

⁴⁴ IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.19

⁴⁵ IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.29

different aspects at the same time.

In the post-Game period, the key is to keep making the Olympic legacy celebration right after the host year. By organizing series of events and activities at the important legacy sites, it will not only recall the collective memory but also re-fulfill the sites with crowds and create a new collective memory, which is a good chance for exploring the new possibility of transformation in the future. Especially for the post legacy development, it might be helpful to double check the previous proposal with reality, if necessary, the project should be changed respect to the facts.

To sum up, IOC Legacy Strategic Approach: Moving Forward has detailed content about post-Olympic development and legacy topic. It placed the Olympic legacy into an important position in Olympic sustainability strategy. From my point of view, tangible legacy, referring to architecture, square, landscape, etc., will be mainly served for intangible legacy as functional space, while intangible legacy will provide a reason, necessity and chances for the development of tangible legacy and enrich space content that occupied by tangible legacy. Nevertheless, working on tangible legacy should be the next focus for architects and urban planners. From now on, by making full use of tangible legacy, taking careful consideration of intangible legacy, when we hold a new edition, we not only create something more valuable in future but also save money and resources for now, thus, as mentioned above economic sustainability should be in priority.

3.4 2012, Event Sustainability Management Systems

ISO 20121 (full name: ISO 20121:2012, Event sustainability management systems Requirements with guidance for use) is a voluntary international standard for sustainable event management, created by the International Organization for Standardization and published in 2012. The standard aims to help organizations improve sustainability throughout the entire event management cycle.

In the ISO 20121, event sustainability management system model was introduced. (Figure 10) By applying this working flow, two key benefits will be achieved according to Fiona Pelham:

Best business practice

It makes sense to take an organized, processed approach to managing economic, environmental and social impacts. In addition, what gets monitored and measured gets reduced, so there are likely to be lower overheads.

Reputational advantage

Using a recognized international framework will enable leaders in sustainability to demonstrate their actions in a credible and transparent way.⁴⁶

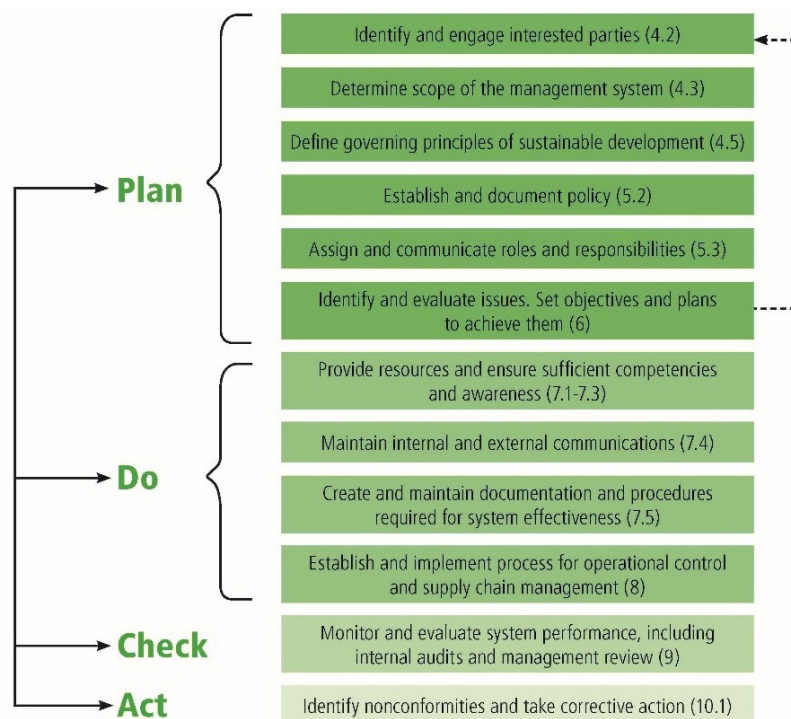


Figure.10 event sustainability management system model
Source: Overview of ISO 20121, a practical tool for managing sustainable events

In fact, London 2012 edition was considered as the catalyst for ISO 20121 as well as a first trial. David Stubbs, Head of Sustainability at LOCOG, said: “London 2012 is proud to have been the catalyst for ISO 20121. This is a piece of legacy with the potential to transform how events around the world consider their economic, environmental and social impacts.”⁴⁷ Actually, during the bid phases, IOC had slightly showed its favor to London’s long-term proposal of Olympic site as it was written in IOC evaluation report for 2012 games:

“The Olympic Games would be the catalyst for the regeneration and development of the Lower Lea Valley, site for the Olympic Park. This park would provide significant sports and environmental legacies. Given the

⁴⁶ New ISO 20121 standard for sustainable events management, Roger Frost, Jun.20 2012

⁴⁷ Event sustainability management - ISO 20121 passes 2012 Olympic Games test, Garry Lambert, Jan.9 2013

magnitude of the project, careful planning would be required to ensure that all facilities are completed on time.”⁴⁸

It is supposed that the legacy and sustainable proposals highlighted during the bid time were one of the reasons made London win.

Nowadays, according to IOC updated rule, certificated by ISO20121 has become the precondition for Olympic bid. As for China, in order to participate the bid for 2022 winter Olympic games, a national standard, GB/T31598 Event sustainability management systems Requirements with guidance for use, based on ISO20121 was formulated. Then, the bid was processed by the national standard. Somehow, it is a prove that ISO 20121 had already contributed to enriching the content of Olympic sustainability.

3.5 Chapter Summary

Looking back over the past 20 years, the issue of sustainable development has made significant progress under the support of United Nations, IOS, IOC and many other international organizations. It is evident that under the leadership of United Nations, IOC took the lead in responding and launched a series of discussions, conferences, publications and attempted to make out a series of recommendations, policies, and rules. Throughout these 20-year development, IOC together with all the host countries/cities has practiced various sustainable strategies, proposals. From 2000 Sydney summer edition to 2008 Beijing Summer edition, by trials and errors, it was the initial period of development, and during this period, proposals were performed and tested in different aspects, locations, and cultural backgrounds. Thanks to these tests which helped to discover various problems, the current strategies and proposals have the opportunities to be corrected, adjusted, enriched and consolidated.

When time went into 2012, the London Olympic edition had earned highly praised especially in the aspects of sustainability. The Games have received praise from NOGs WWF and Bioregional for its “zero waste,” “reusing and recycling” strategy and performance during the construction phase. Meanwhile, these games have also been given the seal of approval from the United Nations Environment Programme(UNEP).⁴⁹ London 2012 edition was a starting point of first real-realized sustainable edition in the history of Olympic Movement.

According to IOC’s expectation, the first edition of the Olympic Games that will fully benefit from the changes initiated by Olympic Agenda 2020 will be Paris 2024, and the first one to fully benefit from IOC Legacy Strategic

⁴⁸ Report of the IOC Evaluation Commission for the Games of the XXX Olympiad in 2012, IOC, 2012

⁴⁹ UNEP chief says London 2012 Olympics has raised sustainability bar for future Games, Tierney SmithClimate home news, Jul.27 2012

Approach will be Olympic Winter Games in 2026.⁵⁰ Thus, from 2010 Vancouver winter edition(First sustainability department in organizing committee) to 2022 Beijing winter edition(the First city hosts both winter and summer edition), I would call this period practicing and implementing a phase of sustainable Olympic Games. Then, from 2024 Paris Games, it will be the phase for consolidating, improving and full implementation.

From Agenda 21 to Agenda 2020 and IOC Legacy Strategic Approach, during the years, the technical approaches to achieve sustainable development of the Olympic Games has been relatively mature, and the theoretical foundation has also been improved. However, in my opinion, there is still something missing or overlooked.

First of all, almost all the strategies proposed so far are based on a Top-to-Bottom work flow which means in some cases, the decision could be made by ignoring the local demanding and serve for the so-called sustainability during the game celebration. Once after the celebration time, if Olympic had brought something wrong or unacceptable by the natives, the protest might happen. With top-to-bottom working flow, the final performances of any Olympic intervention will depend on decision-makers who are usually far away from the local lifestyles. However, it is true that when dealing with such a large-scale event, the bottom-up model is hard to be processed somehow, as local communities might not know what and how to do. Personally speaking, there should be a careful trail of adapting the bottom up model in winter games. Winter games have some sports that require specific sites, suitable topography, and other natural conditions. When choosing the right place for hosting the sports like downhill, instead of deciding by National Olympic Committee directly, a national or regional bid could be organized. Let several candidate communities present their willing and plans for hosting; this might mobilize the local population to participate in the preparation of the Olympic Games and think about their images of Olympic. People are easy to accept the things created by themselves rather than received from others under the force. “The Olympics are amazing, but adding bottom-up ideas like these could make them even better and help make the world a better place and Olympians better citizens. And just imagine. The Olympics inspire local, fractal manifestations. What if school teams, little leagues, pro-teams all did the same.” Rob Kall said.⁵¹

Second, sustainable strategies need time to show their real performances in the contexts. At present, there are some methodologies for measuring the legacy performances, while, if the performances were not good enough, who will take responsibility for those? What kind of actions can be taken to improve poor performance? Moreover, will there be any penalties, if so in which forms? In my opinion, in the post-game period, problems usually seem to be blurred. How to establish an effective long-term monitoring system should be under further discussion.

⁵⁰ IOC Legacy Strategic Approach: Moving Forward, IOC, 2017, p.25

⁵¹ Olympics, Change to Bottom Up to Make Better Olympians and Audiences, Rob Kall, OpEdNews, Aug.14 2016

Last but not least, the role of IOC should find the right balance between supervisor and participator. IOC as the official organization for the Olympic Movement, when dealing with the sustainable issue, it has made a timely response, such as making policies, changing rules and so on. However, it is not enough now, neither IOC nor host countries/cities know precisely how the sustainable Olympic will be, during nowadays exploring period, IOC should join the preparation work more extensively and deeply. Probably, when they announced the architecture competition for new Olympic headquarter in 2013, they were thinking to show their imagination and attitudes to a sustainable Olympic model by setting up a real project case. I suppose that IOC could make more efforts if they work as co-designers with host countries/cities.

Undoubtedly, even though there are still some problems, the overall thing is going in a better direction. Nowadays, when talking about Olympic sustainability, it seems to have a trend of shifting its focus from the bid, preparation phases to celebrate and post-game period more, as a consequence, the concept of Olympic Legacy might become one of the critical topics in the future. When dealing with tangible legacy, it is part of the job of architects and urban planners. Luckily, nowadays some designers are starting to think about not only physical but also subjective contexts when making project proposals. I describe it as a humanistic concerned design and plan. From my point of view, the physical transformation of a single building or area plan will lead to a certain kind of subjunctive transformation synchronously. Moreover, I suppose it is one of the approaches for exploring a solution for realizing a more sustainable Olympic and Olympic Legacy. Last but not least, economic sustainability should be concerned in priority, to tell the truth, a good legacy must also be a suitable tool to turn the initial investment into long-term profit.

1992 Earth Summit:

21st century topic:
Sustainable Development

1993 IOC Publication:

Olympic Movement's Agenda 21
Olympic sustainability basic foundation

1994 Lillehammer Winter Games:

Five "Green Goals" that prioritised
environmental concerns.

1994 IOC new Olympism charter:

Set environment and sustainable
development as third pillar of Olympism

2000 Sydney Summer Games:

First "Transfer of Know How"
programme from past to future host

2004 Athen Summer Games:

Global debates about abandoned
venues after games

2006 Turin Winter Games:

First game certificated by ISO 14001:1996
and EMAS. Benchmark for environmental
protection in Winter Olympics.

2008 Beijing Summer Games:

Most environmentally friendly
edition ever, according to UNEP
October 2007 report.

2020 Tokyo Summer Edition:

First game will benefit from Olympic Agenda
2020. Focus on intangible legacy

2022 Beijing Winter Edition:

First city will host both summer and winter
edition. An opportunity for Integrating summer
and winter sustainable approaches

2024 Paris Summer Games:

First game will fully benefit from Olympic Agenda
2020

2026 Winter Games:

First game will benefit from IOC Legacy Strategic
Approach

To be continued ...

Improve & Implement

2010 Vancouver Winter Games:

The Vancouver Organising Committee (VANOC)
is the first Organising Committee to create a
Sustainability Department

2012 London Summer Games:

Highly praised edition in the aspects of sustain-
ability, "zero waste", "reusing", "recycling". Set a
model for following games

2014 IOC Publication:

Olympic Agenda 2020 20+20 Recommendations
Sustainable strategies under new global situation

2016 RIO Summer Games:

Edition had debates on its sustainable perfor-
mance, pros and cons

2017 IOC Publication:

IOC Legacy Strategic Approach: Moving Forward
Post-Olympic Sustainability development guide

Primary Development

**Figure.11 Three phases of
sustainability development**

Practice & Implement

Chapter 4

Case Study: Post-Olympic London, Tokyo And Beijing

Since First Olympic Game in Athens until 2018, 31 summer games, 28 winter games, three summer youth games and three winter youth games, in total 65 games were held in 50 cities in Europe, North American, South American, Oceania and Asia in the history of Olympic. Among the 50 cities, some cities had already hosted twice and some will have the second edition soon. Figure 12 is a brief summary.

City	Country	Summer Edition	Winter Edition
London	U.K.	1908, 1948, 2012	/
Paris	France	1900, 1924, 2024	/
Los Angeles	U.S.	1932, 1984, 2028	/
Innsbruck	Austria	/	1964, 1976
Tokyo	Japan	1964, 2020	/
Athens	Greece	1896, 2004	/
Beijing	China	2008	2022
St. Moritz	Switzerland	/	1928, 1948
Lake Placid	U.S.	/	1932, 1980

Figure.12 Multiple host cities (1896-2028)

In this chapter, London, Tokyo and Beijing, three cities are selected by me as cases for further study. In general, these three cities have their own strong characteristics in their political system, economic system, culture and ideology. When hosting Olympic Games, every city has to find an appropriate sustainable strategy which takes care about the political, social, economic, environmental and cultural conditions of that period. And their post-Olympic sustainable development experiences may provide a reference for other countries with similar development backgrounds to find their solutions for holding a sustainable Olympic Games.



4.1 London

London, the capital of the United Kingdom, one of the most powerful counties on this planet, has become the first city since ever had already hosted modern Olympic games three times after hosting the 2012 edition. Moreover, the London 2012 edition is recognized as a milestone in Olympic history for its successfully exploration and practice in sustainability, especially on its post-games planning.

To some extent, London was a pioneer in Olympic history of holding games in simplicity. Date back to 1948 London Games, it was the first Olympic Games after the outbreak of WWII. Under the tough economic and social environment, there was no new venues construction, no athlete village, and everything was operated at a very basic level to guarantee only the host of games. Others who did not have much influence on games were cut off and ignored. Today, the Games are known as “Austerity Games” in history. In some cases, past “Austerity” may have some overlap with the present “sustainability & simplicity,” but one thing distinct is that the past one was forced while today’s is proactive.

4.1.1 London 2012, bid and preparation

The themes and targets of London Olympic Games are clearly defined at the bid process. As written in the London candidate file, the priorities and potential of London 2012 are:

- 1) Putting the needs of athletes first;
- 2) Harnessing London’s passion for sport;
- 3) Creating a legacy to transform sport in the UK;
- 4) Regenerating east London communities and their environment.⁵²

Correspondingly, four main themes underpin its vision for the Games in London:

- 1) Delivering the experience of a lifetime for athletes
- 2) Leaving a legacy for sport in Britain
- 3) Benefiting the community through regeneration
- 4) Supporting the IOC and the Olympic Movement.⁵³

From an architectural and urban planning point of view, London would like to make use of 2012 Olympic games as a driver and opportunity for the regeneration of East London communities. “Staging the Olympic Games in the Lea Valley will stimulate a vital economic regeneration programme in London’s poorest and most disadvantaged

⁵² London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.15

⁵³ London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.17

area.”⁵⁴ They believed that with a successful planning project, the constructions and new interventions, London Olympic will change the old district into a new one alive with the Olympics. “By staging the Games in this part of the city, the most enduring legacy of the Olympics will be the regeneration of an entire community for the direct benefit of everyone who lives there...The Olympic Park will become a hub for east London, bringing communities together and acting as a catalyst for profound social and economic change...”⁵⁵ It is visionary and brilliant at the beginning stage to treat Olympic as a district regeneration catalyst instead of talking about how to create a place suitable for Olympic. Naturally, after the successful bid, the preparation works were done under this core concept.

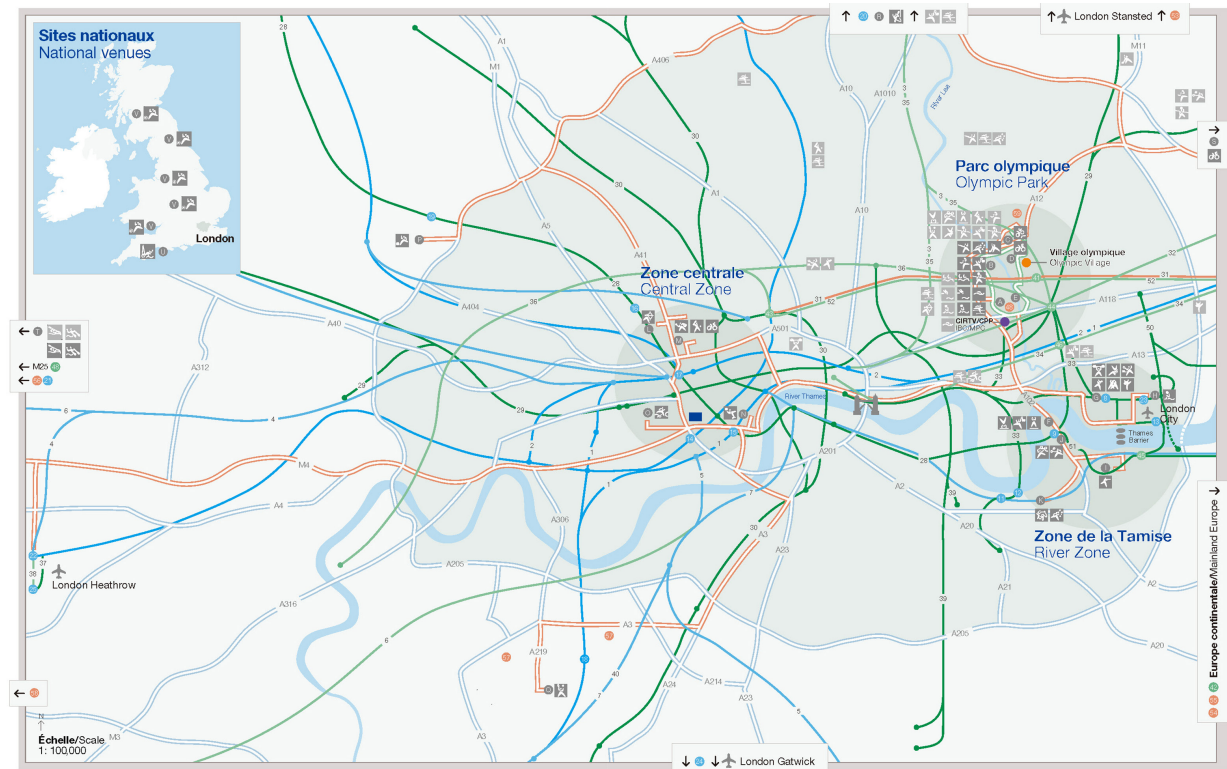


Figure.13 Venue location and transport infrastructure map
Resource: London Candidate File, Volume 2-Theme 8, Sports and Venues

Mapping the existing park area (2012) onto the historic map (1945), the Olympic Park does not invade much the conventional residence district in the area. When bidding for the games, London has decided to transfer this

⁵⁴ London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.23

⁵⁵ London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.19

polluted industrial site into a vivid sports park for hosting one of the most significant events on this planet. Most of the transformation and constructions are taken place within the boundary which has been defined precisely by rivers and railways in history. Actually, there was a transformation project that launched much earlier than the Olympic project.



London Olympic Park Area in 1945
Resource: Google Earth 2019



London Olympic Park Area in 2012
Resource: Google Earth 2019

Figure.14 London Olympic Park Area in 1945 and 2012
Resource: Google Earth Pro 7.3.2.5495 (64-bit)

The records of google earth satellite maps showed that the north part of the area has been under the construction since 1999, that is the project of Stratford International Station. In 1997, London's Docklands Light Railway(DLR) undertook a strategic 'Horizon' study to review potential extensions to the existing network and to develop a strategy for the development of the railway.⁵⁶ And the Stratford International extension project became the result of previous study. The station was completed in 2006 and open in 2009 to provide improved public transport capacity, reliability, accessibility and frequency between Stratford and London downtown by converting the North London line to DLR use. Now it has regular service 4 trains per hour connecting to St.Pancras international station with seven minutes riding. The Stratford station where metropolitan underground passes is 2 minutes by walking from Stratford international. With the new opening of Stratford international, the district transportation hub was formed basically. Obviously, creating a transportation hub was the initial district plan. As a general routine of development, other investments will follow after infrastructure completed.

56 The Stratford International extension: Building for the future, Jonathan Fox, Intelligent Transport, May.11 2010

As written in the publication from Olympic Park Legacy Company: “The London Plan identifies staging the 2012 Games as the ‘major catalyst for change and regeneration in east London, ... Without the Games, change would still happen, but it would be slower, more incremental and less ambitious from a sporting, cultural and environmental perspective.’”⁵⁷ The Stratford International case is a good prove. The project was launched before the Olympic project, but it integrated well with late Olympic planning in coincidence. During the game time in 2012, the Stratford international station is the nearest station of Olympic Park and one of the most important gates to the Olympic zone with the high-speed trains shuttle people from central London in every 6 minutes. By having this newly built infrastructure, Olympic zone is well connected to the city center with convenient and fast public transport. At the same time, by holding Olympic, the area nearby has been developed and constructed at a dramatic speed for future life.

Finding the right place for hosting is one of the great achievements of the London 2012 Olympic Games. It chose the place where transformation was happening. Also, it was wise of London Organizing Committee of The Olympic & Paralympic Games (LOCOG) to involve those transformations into its Olympic masterplan, as a result, from the economic point of view, investment of new infrastructure was saved. Moreover, thanks to the Olympic Games, it brought the opportunity as well as enough ambition, determination and abundant supports from various aspects for the regeneration plan.

Apart from London’s right site choice, the venue and facility planning is another successful practice. In order to control the budget as well as optimize the performance of sustainability, the numbers of new permanent venues and facilities are limited at nine. Most of the important venues and athlete villages are located inside the Lower Lea Valley Olympic park, where the main events were held. The design also allowed the athletes to compete and train with minimal travel times from the Olympic Village. As a result, this centralized planning concept makes Olympic park become the game focus point which defines a district core that is necessary for the target of community regeneration. Nevertheless, the initial planning was changed during the preparation period, and the Figure.16 is a comparison between initial masterplan and final realization in 2012 which was published by LOCOG in January 2012 as part of 200-days-to-go celebration.⁵⁸ In



**Figure.15 Stratford International Extension Project
1999,2003,2006**

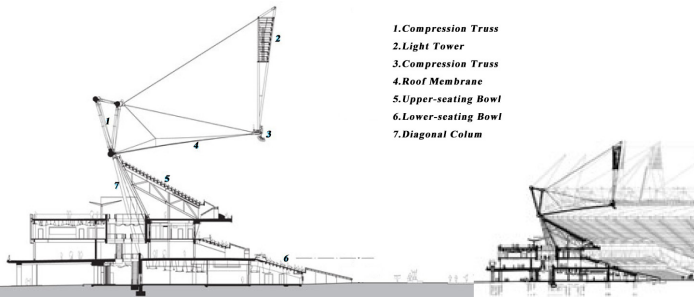
Resource: Google Earth Pro 7.3.2.5495 (64-bit)

⁵⁷ London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.23

⁵⁸ The Olympic Park – New Names, New Map, Ollie, Mapping London, Jan.10 2012

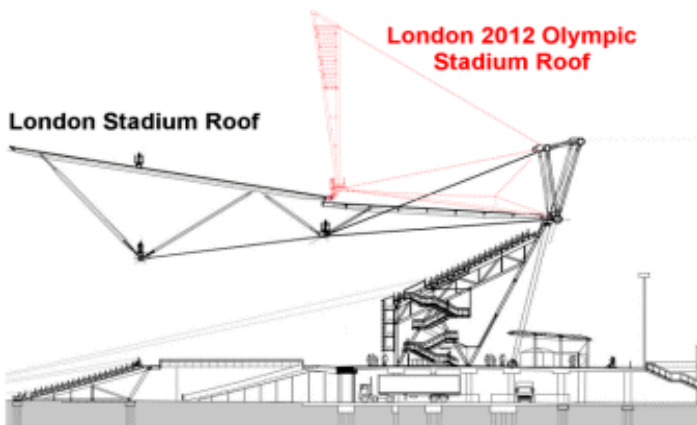
general, the final realization plan follows the basic layout of the initial proposal, especially in the southern area. While the northern area of Olympic park has made much difference from the initial proposal, the most evident issue is the change of surface occupation. As the area bounded in black color, the proposed Olympic village was almost double size of the constructed one. Besides, in the northern area, venues were placed separately in turn which led to the space waste, but its design may relate to the types of sports. In the final planning, the types of competition have been changed, and the venues were rearranged in a more aggregated form which left spaces for other function, such as street market, the extension of river bank leisure space, cultural event space and other non-sport-use spaces. The enlargement of non-sport-use space can be treated as a visionary action for post-game community-oriented transformation, as it is evident that sports facilities for Olympic events will turn to be an oversized and heavy burden for the community after games.

To briefly sum up, the brilliant choice of site, appropriate planning, and instant adjustment have made many contributions to the success of the London 2012 Games. The core target of transforming community was followed throughout the whole process under efficient and effective work by LOCOG. Treating the Olympic holding as a catalyst was the basic idea, in another word, the Olympic was something occasionally happened and used to speed up the local transformation. To some extends, Olympic served for the local natives. Thus, changing the role of Olympic from something we serve for into something useful to meet our demands is one of the inspirations from London's experience.



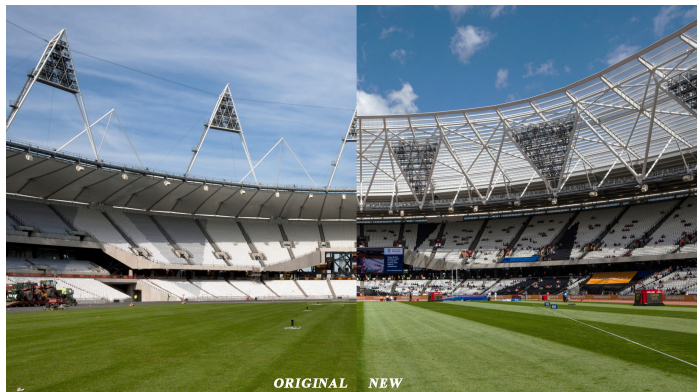
London Stadium West Stand Section

Resource: Populous Architects <https://populous.com/>



New and original roof configuration

Resource: <http://www.lusas.com/>



ORIGINAL NEW

Original and new roof configuration

Resource: Populous Architects <https://populous.com/>

4.1.2 Post-game London Olympic Park, 2013-2018

During the bid and preparation period, London 2012 has always been considering as the catalyst and booster of East London. After the finishing of Paralympic game, London has gone into post-game time, and legacy was turned to be the focus. There is a statement from the official agency of London 2012 legacy management, LONDON LEGACY DEVELOPMENT CORPORATION, saying that the London Olympic Park is being turned into a freshly new urban leisure space in one of Europe's largest regeneration projects.⁵⁹ Nowadays, the Olympic Park has been renamed into Queen Elizabeth Olympic Park, a typical British name. Somehow, the park starts its journey of Olympic reduction.

In April of 2012, London Legacy Development Corporation(LLDC) published a guidebook of future sustainability development, Your Sustainability Guide To Queen Elizabeth Olympic Park 2030. In the guide book, the Olympic park project is divided into three phases: Mobilisation phase 2009-12 of delivering an inspirational and realistic sustainable vision; Transformation phase 2012-15 of changing arena area into London new destination; Regeneration phase 2015-30 of the growing neighborhood as a catalyst for sustainable living.⁶⁰ Three years later, a detailed document, The Legacy Corporation Local Plan 2015 to 2031 was published under the authority of LLDC including the contents of the outline of the key issues in the area, the vision for the area in 2031, policies and detail implementation methods.⁶¹ In the document, the mission is stated as following: "London Legacy Development Corporation's mission is to use the once-in-a-lifetime opportunity of the London 2012 Games and the creation of Queen Elizabeth Olympic Park to develop a dynamic new heart for east London, creating opportunities for local people and driving innovation and growth in London and the UK."⁶² These publications figure out the final development goal and

59 Creating The Queen Elizabeth Olympic Park Post-Games Transformation, 03, Olympic Park Legacy Company, Feb 2012

60 Your Sustainability Guide To Queen Elizabeth Olympic Park 2030, LLDC, p.38,40,43

61 LOCAL PLAN, <https://www.queenelizabetholympicpark.co.uk>

62 LOCAL PLAN 2015 TO 2031, London Legacy Development Corporation, p.13

strengthen the determination of the following works.

As far as my concern, in order to reach the final goal set by LLDC, the following post-game actions can be concluded with two keywords, shrinkage and regeneration. The term shrinkage mainly refers to the physical transformation of Olympic venues and facilities after games. It was highlighted in the London candidature file that “In order to reduce the costs of staging the Games, we are using existing venues wherever possible and temporary buildings wherever appropriate. We are only building new venues where clear legacy needs have been identified and sporting and business plans developed for post-Games use. ‘Excellence without extravagance’ has become our mantra.”⁶³ The use of temporary buildings or structures was applied in the Olympic park very well during the preparation period. As a consequence, the shrinkage happened naturally with the removal of temporary facilities after games.

One of the most impressive cases of at the scale of the single building is the transformation of the main stadium. During the game period, by adding temporary metal structures, the capacity reached 80,000. After games, when the stadium re-opened in 2016, the capacity was reduced to 60,000. According to the latest information from official website of London Stadium, at present, the capacity has been shrunk to 57,000 seats in football mode with the potential to increase capacity to 60,000 and 80,000 capacity for concerts including free-flow between the field of play and lower tier.⁶⁴ Date back to the original design, the stadium was separated into two parts, the temporary part, and permanent part. The permanent part occupied lower spaces including seating and other necessary functional spaces. While the major part of the stadium was designed as a temporary structure which can be adaptable to different occasions, in fact, if the whole temporary is removed, the remaining capacity will be around 25,000 to 30,000.

Actually, due to the frequent event holding, the stadium is still used in high efficiency and the scale of venues did not shrink to the minimum size. Instead, the roof structure has been modified, in order to serve for the new function in an economical and practical way. The new roof is double size of Olympic time which can cover every seat in the stadium. Together with the integration of newly installed lighting towers, the new stadium can create a more embraced atmosphere for the audience and athletes inside. With this adaptable and flexible design, the venue can easily be transformed necessarily anytime.

Nowadays, the London Stadium is under the ownership of E20 STADIUM LLP which was fund by LONDON

⁶³ London Candidate File, Volume 1-Theme 1, Concept and Legacy, p.19

⁶⁴ <https://www.london-stadium.com/stadium/about>

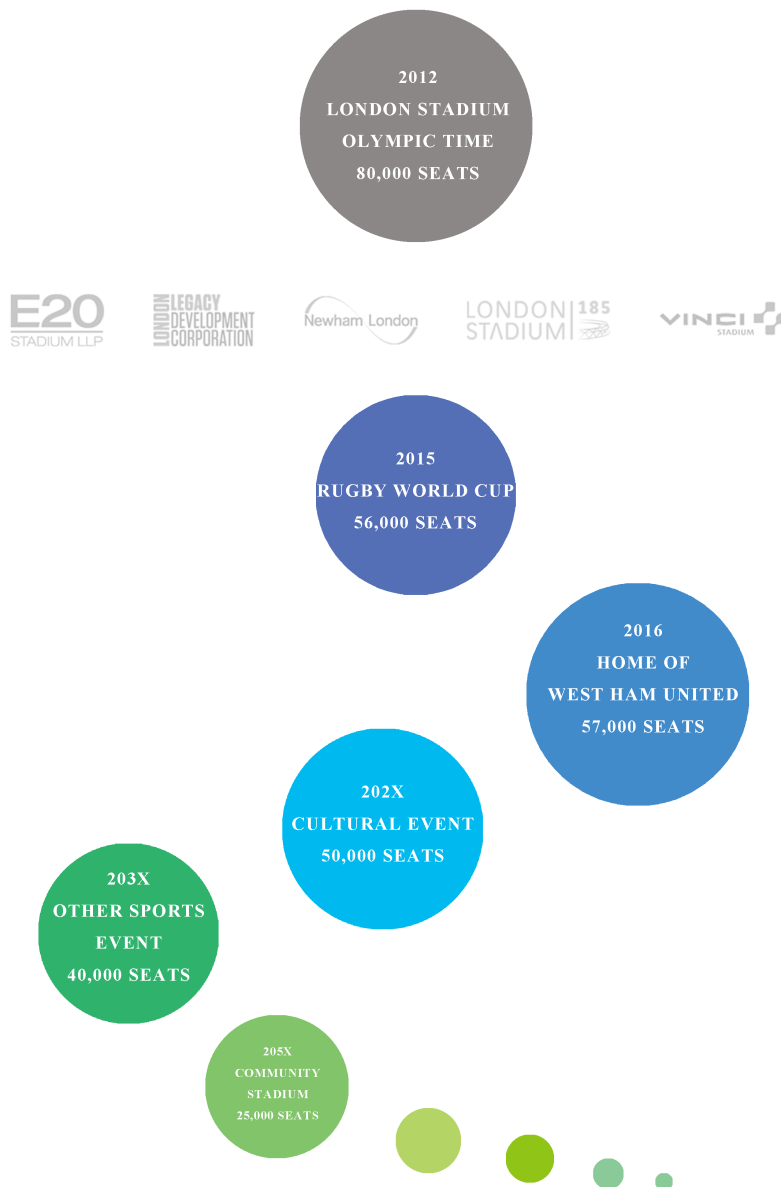


Figure.17 London Stadium Post-Game Development And Future Imagination

LEGACY DEVELOPMENT CORPORATION and operated mainly by LONDON STADIUM 185. At the same time, the London stadium has been transferred into a home to popular local football team West Ham United.⁶⁵ As a consequence, football matches, concerts, and other events are held in London stadium often and support the post-game stadium development in a very positive way. To some extends, with the establishment of the partnership with the popular football team and the support of rich football culture, the stadium's long-term future is secured.

From the London Stadium's case, shrinkage should be based on the real demands from the present function, instead of shrink to the minimum capacity of 25,000 at one time, finding the right post-game function should be processed with shrinkage in parallel.

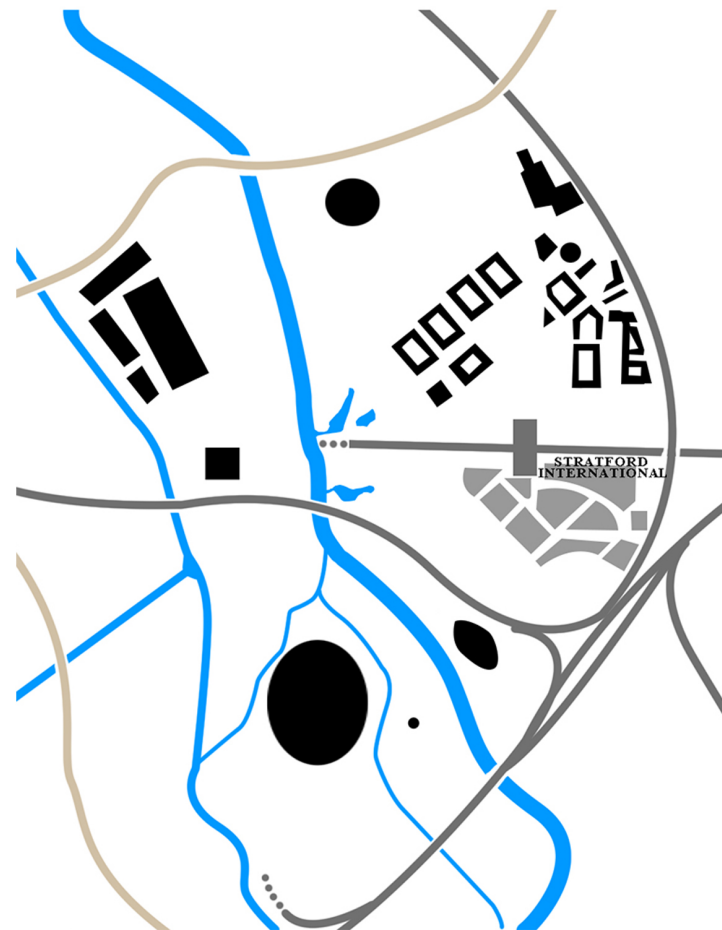
Apart from the single building shrinkage, the whole park area is also in its Olympic shrinkage time. Figure.18 shows the transition of Olympic-related facilities footprint from 2012 to 2018.

After the finish of Paralympic Games, the whole park was turned into a construction ground again. The priority was to clear away the contemporary structures and installation which were supposed to serve only for the Olympic Events. Second, the temporary venues and sports facilities were removed, such as outdoor bicycle racing ground, warm-up venues near the main stadium, the hockey venue and handball venue at the east side of the media center. Those venues were supposed to

⁶⁵ <https://www.whufc.com/new-stadium/visiting-london-stadium>



2012



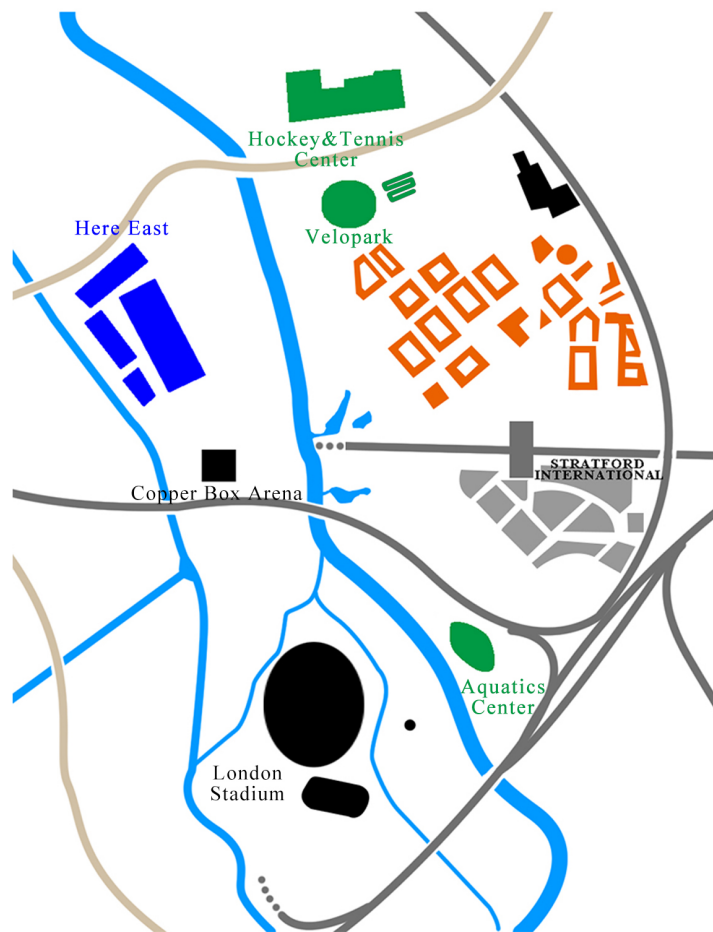
2013

Figure.18 London Stadium Post-game Development and Future Imagination

either be moved to other location or to be torn down for leaving space for other function in future transformation due to the lack of legacy value. In 2013, it was the period that the whole park had its minimum Olympic footprint, comparing to the 2012 condition, only four buildings maintained the original footprint, London Stadium, Media Center, Velopark and Olympic village complex. However, the same footprint did not represent the real change that was happening during this period. As it is known, the London stadium has launched its transformation project. At



2017



2018

the same time, the Aquatics Center also removed its two wings and left spaces for the late landscape project. When time went into 2015, after 3-year construction work, the Olympic park has somehow turned into a real urban park with much more green landscapes and leisure facilities, the general park layout has been formed and shifted from Olympic style, as mentioned in the guidebook released in 2012, 2015 is the beginning year of the third phase, Regeneration. Moreover, the further development was undergoing with a specific focus on the area near the former Olympic village zone where the future community center is supposed to be located. The footprints marked with

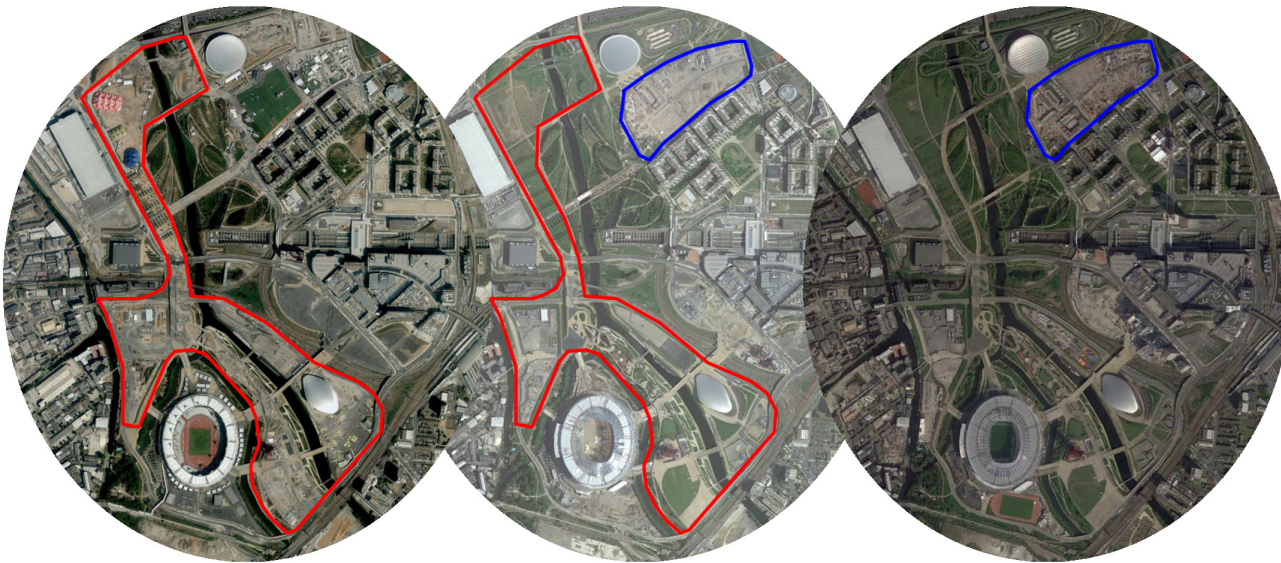


Figure.19 Queen Elizabeth Olympic Park 2013 / 2015 / 2017

green, blue and orange in the map 2018 represent the changes from an Olympic-focus to a local-oriented facility.

The facilities marked in green are former Aquatics Center, Velopark and new Hockey & Tennis Center. Actually, the interesting fact is that the New Hockey & Tennis Center is the reconstruction of the removed Hockey venue integrated with shrunk tennis center at the location of former tennis venue in 2012. As it is written in its official website: “Creating a permanent hockey legacy was one of the pledges in London’s Olympic bid, and the opening of Lee Valley Hockey and Tennis Centre delivers on this promise, along with outstanding tennis facilities—all available to everyone.”⁶⁶ In my opinion, combining the two sports into one shrunk size complex while still maintaining the world-class standard is an economical approach for creating affordable facilities for operators and consumers, it is shrunk but still can host world-class matches in future, so does the Aquatics Center. Nowadays, these former Olympic venues have been successfully turned into public sports

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London aquatics center website

Resource: <https://www.londonaquaticscentre.org/>

66 <https://www.visitleevalley.org.uk/go/hockey-tennis/>

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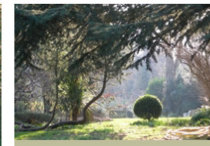
River Lee Country Park

A tranquil spot for nature watching and walking or discover the sculpture trail, natural play and dog agility!



50 great walks

Take a guided walk in of our 50 great walking spaces in the Lee Valley and discover the park's treasures



Myddelton House Gardens

Discover the story of E A Bowles as you explore these beautiful gardens

Events in the Lee Valley



Bittern Roost Watch | 20 January

Discover the work happening in the Lee Valley to conserve these elusive birds



The Ultimate Snowdrop Sale | 26 January

Our popular Snowdrop sale is back with flourishing nurseries to view and purchase



Hot Dog 'n' Date | 14 February

A date to remember conquering white water rapids together!



Activities category on Lee Valley (Hockey&Tennis Center) Website

Resource: <https://www.visitleevalley.org.uk/>

facilities provide various facilities, training courses, health events, sport education services, and other affordable services to the neighborhoods. Olympic legacy is right to be used in this proper and affordable way.

Basically speaking, the term of shrinkage has more relation with physical transformation of former sports facilities, while turning into the blue and orange colored area, it has more meaning in the term of regeneration.

The blue one is another interesting case of London post-game legacy adaptation. The building form generally was maintained as it was in 2012 London Olympic games, but has been transformed from former Broadcast and Press Center into a new innovation hub named as Here East. Here East is a very colloquial name which can definitely bring an imagination of sweet, local, comfort atmosphere to the people heard of it. In fact, Here East now is the place that brings together business, tech, media, education and data in the pursuit of innovation, as the slogan of Here East “London’s home for making”.⁶⁷

“We’re home to established names and nimble startups alike. Radicals, reformers, visionaries, industry heroes and like-minded locals – they’re all part of our East London heritage and its geography of innovation”⁶⁸ This sentence was written on the website of Here East. Creating and making is the main theme of this building. From the technical point of view, the economic and environmental sustainability has been realized by adapting the advanced innovative technology in this building, such as the installation of solar panels and rain collectors on the rooftop, the use of highly efficient motion-detecting luminaires shading system. However, what makes Here East outstanding is its excellent performance in social sustainability.

Here East, this 1.1 million square meters colossal space has been defined as a creative hub with office and commerce and establishes a communication bridge between thousands of startups and tech giants. The original function as press center, broadcast center and theater are reserved and serve for the people who are in use nowadays. The most important issue in Here East is to create collisions, in another word, inspiration. Functioning as a meeting point for people and companies with various backgrounds and contributing to every single business cooperation is good for Here East to gain attention nationwide and attract future investments. Functioning as a hub, it will not



HERE EAST Bird View

Resource: <https://www.mandatory.com>

Creating Collisions

Here East is a meeting point. Creative businesses growing in scale collide with businesses of scale growing in creativity.

Businesses
of scale
growing in
creativity

Creative
businesses
growing
in scale

“Creating Collisions”, Here East Website

Resource: <https://hereeast.com/>

⁶⁷ <https://hereeast.com/discover/about-here-east/>

⁶⁸ <https://hereeast.com/discover/about-here-east/>



Figure.20 Pioneer Cooperation Bodies
Resource: <https://hereeast.com/> (modified by author)

only gather people but more importantly, gather ideas and bring opportunities to the people who work and live here.

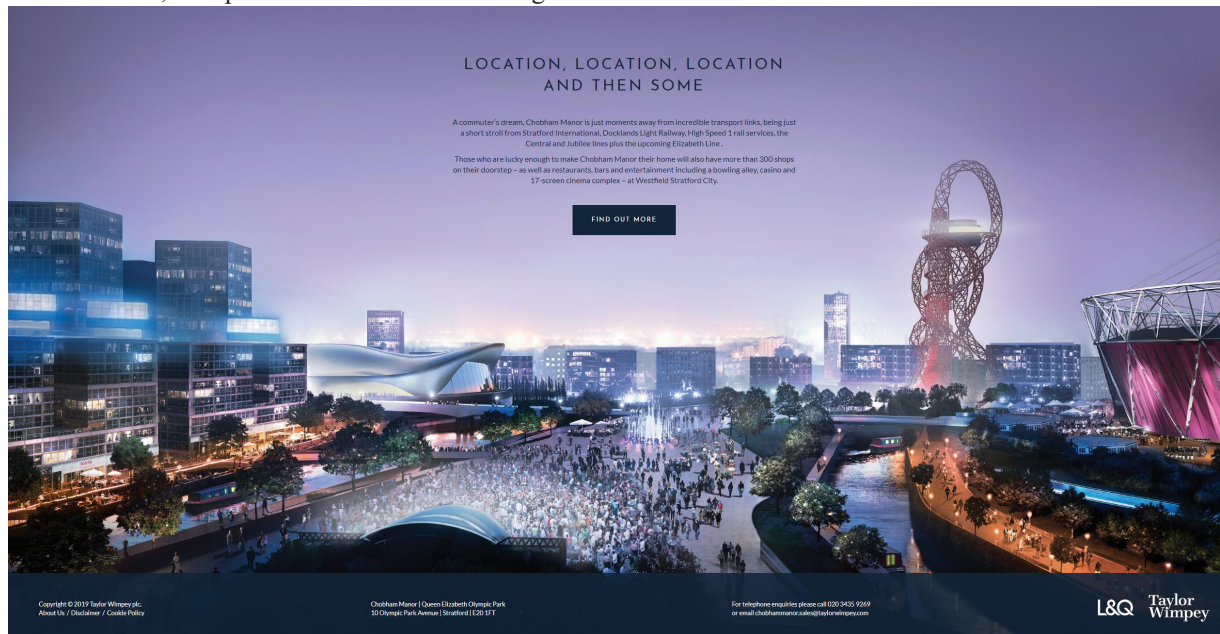
Besides meeting function, the wide range of cooperation established among entities from different fields also contributes to the diversity in the hub. At present, the cooperation has covered fields of education, arts, fashion industry, technology, sports and charity. (Figure.20: collection of pioneer cooperation bodies) With such a wide range of cooperation, Here East has become a comprehensive center and more powerful to embrace more people and activities. Mixing people, creating collisions, gaining inspirations and spreading ideas, all of these are going to make Here East into a “The vibrant heart of East London.”

It is wise of LLDC to make Here East Hub at the beginning phase of the legacy plan and open earlier than the new neighborhoods. As we know, people will not move to a new place without something for the living, and in today’s society, it usually refers to the job. Bringing the workers from other districts to Queen Elizabeth Olympic Park is a clever promotion for the whole area. Where business goes, where people are. In the future, the successful operation of Here East hub will attract more young generation to come to seek for their businesses and future. It sounds similar to the industrial revolution in history, workers and their families were moving to the new industrial district for working and living. However, today, they move for a creative hub, an innovative industrial zone, business opportunity and sustainable lifestyle. If some of them succeed, they will bring other workers, partners and even their own families here. With enough and stable population, the district can finally realize its sustainable development.

Last but not least, the orange area was the former Olympic Athlete Village in 2012. After the Olympic game, following the initial goal of community regeneration, the area starts its evolution. It is the essential and crucial point of the whole legacy plan, and the initial step is to capture post-game attention and invite inhabitants. In another word, the resident project for generating people is in priority. The first residential project is launched in East Village which is former athlete accommodation during games period. Since November 2013, residents have been moving into this district which has been equipped with 2,818 new houses half for affordable homes and another for profit⁶⁹, Chobham Academy school, shops and huge parklands. And it is the first district using new postcode E20.⁷⁰ While, following the first transformation in E20 area, the next following project, Chobham Manor welcomed its owners in the year of 2016. It has a significant meaning for the whole legacy project, the Chobham Manor is the first newly built community after the Olympic Games. With this new investment, LLDC hopes to

69 Olympic Village – review, Rowan Moore, The Guardian, Jan.8 2012
70 EAST VILLAGE, <https://www.queenelizabetholympicpark.co.uk/the-park/homes-and-living/local-developments/east-village>

attract enough attention from potential inhabitants and advertise the successful transformation since 2012 in the park area and its sustainable lifestyle in the district. “Chobham Manor will provide 859 new homes, including town and mews houses, maisonettes and single apartments, with 75% designed for families and 28% as affordable homes.”⁷¹ However, what differs from East Village is that Chobham Manor has been developed more closely to a real estate model. It has to take action to attract consumers who have willing to try a new lifestyle in East London, in Olympic Park, as a matter of fact, marketing and profit are necessary to be carefully considered. Besides, the proportion of profit housing and welfare housing also needs a balance. Considering the goal of changing old, the backward district with the high unemployment rate and promoting a new sustainable lifestyle, it is necessary and reasonable to bring more educated people into the new districts, in another word, the new middle-class or young generation with high educational background should be the main target customer group. The better mixture among the people from different social classes will speed up the transformation in a positive way. Thus, when dealing with this issue, the apartment should be well designed.



Chobham Manor Selling Website
Resource: <https://chobhammanor.co.uk/>

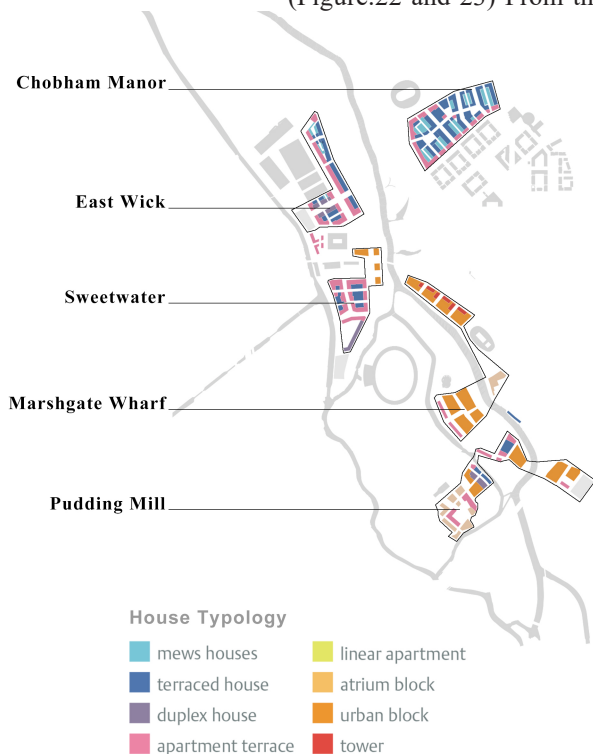
In fact, in Chobham Manor district, if provides a collection of homes includes stylish one, two and three-bedroom apartments and fabulous three, four and five-bedroom townhouses which can meet different demands. As a result,

⁷¹ CHOBHAM MANOR, <https://www.queenelizabetholympicpark.co.uk/the-park/homes-and-living/chobham-manor>

the first phase of Chobham Manor has archived its goal, and the second phase now has attracted high levels of interest.

Apart from the Chobham Manor, the greater district generation plan includes another four new communities: East Wick, Sweetwater, Marshgate Wharf and Pudding Mill. These four communities are located in the gap space between Olympic legacies in order to create a uniformed residential atmosphere in the whole area and reduce the sense of former Olympic park which everything is out of normal life scale. Focusing on the same goal of Chobham Manor, various housing typologies provide a wide range of choices for different customers. Figure.21 shows the house types and distribution.

Certainly, each district will have its themes and characteristics based on its surroundings and development goals. (Figure.22 and 23) From the LLDC's expectation, the whole park will be transferred into a district which has five neighborhoods with variety of housing types in the park, three enterprise and business zones and other social facilities like school, hospital, library, nursery and so on. The new Queen Elizabeth Olympic Park center will finally generate the whole east area of greater London metropolitan.



District	Theme	Facilities (other than sports)
Chobham Manor	High quality residential district	Housing Parks School
East Wick	Diverse, mixed-use district	Housing Business and creative hub Cultural and community hub
Sweetwater	Unifying central amenity	Pedestrian and cycling path Primary school and play fields Other connection path
Marshgate Wharf	Energic and vital district	Housing Commercial spaces Visitor amenities Landscape observation
Pudding Mill	Refurbished industrial heritage	Housing Services for creative enterprises Workshops

Figure.22 District theme and facilities
Resource: A Walk Around Queen Elizabeth Olympic Park, LLDC, p.69/83/95/111/127
(modified by author)

Figure.21 Housing typology distribution
Resource: A Walk Around Queen Elizabeth Olympic Park, LLDC,

Pudding Mill



East Wick



Sweet

Figure.23 New Districts Imagination
Resource: A Walk Around Queen Elizabeth Olympic Park, LLDC,
p.82/92/105/124/135 (modified by author)



water

Marshgate Wharf



Chobham Manor

Figure.23 New Districts Imagination
Resource: A Walk Around Queen Elizabeth Olympic Park, LLDC,
p.82/92/105/124/135 (modified by author)

At present, look at the performance of partially realized Chobham Manor district, London's legacy project is in the right direction. However, there are some concerns about its developing rate and continuity. From 2015 till now, less than half of the whole Chobham Manor project has been realized, and the other four communities are still waiting for starts. Besides, the Brexit issue is another unstable political factor which may affect the progress of the project if the political discontinuity happens, something would turn to be up in the air.

In a short conclusion, London spent almost five years finishing the Olympic shrinkage, and from now on, it has ten more years to entirely delivery its initial promises. Looking at the high-quality performance presented so far, to be honest, London is not in a rush and should not be in a rush for the following year, and the most important thing is to secure the final sustainable performance and inhabitant experience. Nevertheless, with all detailed post-game action plan, effective monitor and control from LLDC, and fruitful cooperation between different entities, so far we can foresee the bright future of London 2012 legacy, Queen Elizabeth Olympic Park. It will finally generate a rich community with diversity and sustainable living style as London newest destination in the future.

4.1.3 Case Summary:

It has been six years since the London Olympics. Now, when we look back on the whole process from the preparation to the present, we can responsibly say that London is truly fulfilling its original commitment to IOC and the world. From the initial site selection of the Olympic Games to the construction of the venues to the successful holding, and then to the post-Olympic legacy plan, LOCOG provides sustainability guidance and strategy for each phase and clearly state the sustainability requirements. Nowadays, some legacy projects are completed in turn. As so far Chobham Manor neighborhood case and Here East case, from immediate evaluation, they have set the excellent sustainable development examples of how the future residential district and business district could be developed and integrated into this legacy park with the concepts and strategies updated.

Another critical factor for London's successful sustainable development is that LOCOG and LLDC have consistently implemented the core goal of community regeneration and developed a series of sustainable development policies, strategies and implementation approaches to promote the coordinated development of the East London area. Nowadays, the East London area is enjoying the benefits brought by the Olympic legacy and successful management, monitoring and cooperation work done by LLDC. The whole park is now accelerating the regional upgrading and transformation in east London. It can be said that for a long time in the future, as long as this community keeps developing in this healthy and sustainable way, it is the best awards and recognition for London's Olympic sustainability work, especially the post-game work.

4.2 Tokyo

Tokyo, the capital city of Japan, is the first Olympic host city in Asia. Tokyo's successful bid of Olympic 1964 Games had a significant meaning for both Japan and Asia. It was the global re-recognition of Japan society after its defeat in WWII. Moreover, it was the first time to bring the Olympic Spirit to a new continent, the Olympic Ring that represents Asia was light up officially. Since then the Olympic flame burn on the Asia continent, from 1972 Sapporo Winter Games, 1988 Seoul Summer Games to the forthcoming 2020 Tokyo Summer Games, there will be eight accounted games until 2022 in Asia.

City & Country	Year	Summer / Winter
Tokyo, Japan	1964	Summer
Sapporo, Japan	1972	Winter
Seoul, South Korea	1988	Summer
Nagano, Japan	1998	Winter
Beijing, China	2008	Summer
Pyeongchang, South Korea	2018	Winter
Tokyo, Japan	2020	Summer
Beijing, China	2022	Winter

Figure.24 List of Host Cities in Asia
Resource: Information collected and arranged by Author from IOC websites

With my one-year stay and experience in Tokyo, I had the chance to explore this city and its Olympic culture on my own. What struck me was that the many of Olympic legacies from 1964 are now presented to me in a lively state rather than a historical relic. After almost 60 years, many of the venues are still well-preserved and frequently used for various occasions. Also, some of them will take tasks to hold part of matches in 2020 as one of the sustainable strategies for Tokyo 2020 games. If we check by present sustainable criteria, the Tokyo 1964 legacies have somehow already reached favorable performances in sustainability, even though there was not much concern about the issue of post-game sustainable performance. Nowadays, Tokyo is in its preparation time for 2020 games, and it is evident that the Tokyo 2020 Games has already benefited a lot from 1964 legacies. In fact, not only memorize the past glory of Tokyo 1964 Games but also by taking the chance of holding 2020 Olympic games, Tokyo attempts to find a new catalyst for development especially in Tokyo bay area which is a relatively new zone in Tokyo entirely constructed on the artificial land. To some extends, bring the new interests and economic development vitality to Tokyo and Japan is the real goal of holding the Olympic Games. When dealing with the new district development issue, some strategies and actions were in debates. Nevertheless, so far, the Tokyo 1964 Olympic legacy has had abundant things for us to learn, and at the same time, some cases happened during the

2020 preparation period is also worth to be thought.

4.2.1 Living legacy, 1964 legacy in today

Dating back to the time before 1964 Tokyo Olympic games, it is widely known, from 1954 to 1972, Japanese economy was in a rapid growing period. "Golden sixties"⁷² is the exact word for expressing the national atmosphere at that time. As a reflection, this territory has gained enough power and abundant resources for accepting any new chance of development as well as challenges. And certainly, the country was seeking for an opportunity to present its great achievement to the world after World War II. In fact, there should be an Olympic Game in Japan in 1940, unfortunately, because of the invasion of China in WWII, the games were canceled. "the second world war robbed Japanese of the opportunity to host the Olympics"⁷³. Thus, for all Japanese people 1964 1964 Olympic was treated as a symbol of reemergence on the world stage for Japan.

For Tokyo 1964 Summer Games, there was no existence of an aggregated Olympic zone planning as the convention. Instead, the many venues were distributed separately in the Tokyo metropolitan area. (the Tokyo metropolitan area refers to the prefectural-level jurisdiction, Tokyo-to [東京都], including 23 special wards and other cities to the west) There is a list of 1964 venues in Tokyo metropolitan.(Figure.25)

Venue	Sports	Location
Hachioji Velodrome	Track Cycling	Hachioji-shi, Tokyo-to
Komazawa Gymnasium	Athletics	Setagaya-ku, Tokyo 23 wards
Komazawa Hockey Field	Field Hockey	Setagaya-ku, Tokyo 23 wards
Komazawa Stadium	Football	Setagaya-ku, Tokyo 23 wards
Komazawa Volleyball Courts	Volleyball	Setagaya-ku, Tokyo 23 wards
Korakuen Hall	Boxing	Bunkyo-ku, Tokyo 23 wards
Yoyogi National Gymnasium	Basketball / Diving / Swimming	Shibuya-ku, Tokyo 23 wards
Shibuya Public Hall	Weightlifting	Shibuya-ku, Tokyo 23 wards
Tokyo Metropolitan Gymnasium	Gymnastics	Shibuya-ku, Tokyo 23 wards
Tokyo Metropolitan Indoor Swimming Pool	Water Polo	Shibuya-ku, Tokyo 23 wards
Waseda Memorial Hall	Fence	Shinjuku-ku, Tokyo 23 wards
National Stadium	Athletics / Football	Shinjuku-ku, Tokyo 23 wards
Nippon Budokan Hall	Judo	Chiyoda-ku, Tokyo 23 wards
Chichibunomiya Rugby Stadium	Football	Minato-ku, Tokyo 23 wards

Figure.25 1964 Venues in Tokyo-To
Resource: Information collected and arranged by Author from IOC and wiki websites

⁷² A History of Japanese Trade and Industry Policy, Mikio Sumiya

⁷³ Olympic Games 1964 Innsbruck Tokyo



Tokyo Tourist Map, 1964. With Olympic Venue Locations
 Resource: JUN.17 2016, Copyright 2004-2019 by Steve Sundberg
 (<http://www.oldtokyo.com>)

The venues were mainly located in 3 administrative districts, Setagaya district, Shibuya district and Shinjuku District. However, apart from the venues listed above, some competitions which do not require a venue like marathon, race walking and road cycling were also held in Chofu-shi, Fuchu-shi and Hachioji-shi, which are located to the west of Tokyo 23 wards, and some other events were held in the nearby cities as well, mainly in Saitama prefecture in the north of Tokyo-to and Yokohama city in the south. Taking a look at the tourist map published for the 1964 Olympic Games, it is precisely to define the two Olympic zones and several Olympic spots in the map. Two zones are Setagaya Komazawa Olympic park at the down-left part and Yoyogi-Shinjuku Zone at the left-middle part. Setagaya Komazawa Olympic park was a relatively aggregated zone for Tokyo 1964 Games, and it was similar to the traditional Olympic plan, but compared to the regular Olympic park, its scale is much smaller in physical size and number of the event held.

According to records, for Tokyo 1964 games venues, 6 were built before bid, 13 were new for Games, 5 were renovated and 8 were in temporary.⁷⁴ In 1964, the venues optimized plan was considered by the Tokyo Olympic Organization. Probably it was affected by the traditional Japanese design concept of refinement and ultimate use of spaces. From today's sustainable point of view, in 1964, Tokyo has made it in its venue plan. It is a pity that without the precise definition and awareness of post-game sustainability, many venues were removed after the 1964 games for other purposes. Nevertheless, some venues were reserved because of the iconic design and memorial value. Moreover, surprisingly, they have become the most successful post-game Olympic legacy cases for today's post-game sustainable study. The cases are going to be presented Komazawa Olympic Park, Yoyogi National Gymnasium, Budokan Hall and infrastructure construction of Shinkansen and Metropolitan Expressway.

⁷⁴ Tokyo Olympics 1964 vs. 2020: We Compare the Iconic Venues, LISA WALLIN, Tokyo Weekender, Jun.1 2018

Komazawa Olympic Park [駒沢オリンピック公園]:

Komazawa Olympic Park is the only aggregated Olympic zone for Tokyo 1964 Olympic games with four venues hosting the events of athletics, hockey, football and volleyball in Setagaya district, southwest of Tokyo central area. The original site of Komazawa was used as a golf playground for the emperor which inherited the sports DNA for the area. In 1932, the site was decided to be renovated into venues and

the main area for 1940 Olympic Games, unfortunately, the game was canceled.⁷⁵ Nevertheless, since the project has been launched and developed for some years, some venues were constructed and held some events such as 4th National Sports Festival in 1949, Volleyball matches in 3rd Asian Games of 1958 and 14th National Sports Festival in 1959. At the same year, with the successful bid of the 1964 Tokyo Olympic

Games, Komazawa park could finally realize its original developing purpose as a sports complex for the Olympic Games. Four main venues were used in 1964 Games, Komazawa Gymnasium for wrestling ring; for football matches; Komazawa Hockey Field; and Komazawa Volleyball Courts.

After the finish of 1964 Olympic Games, the whole park functions as an important memorial park for 1964 Olympics as well as a sports complex for the whole country. Various events and upgrading projects were launched on this site, Figure.28 is a brief time line of main events happened in Komazawa Olympic Park after 1964 Olympics.

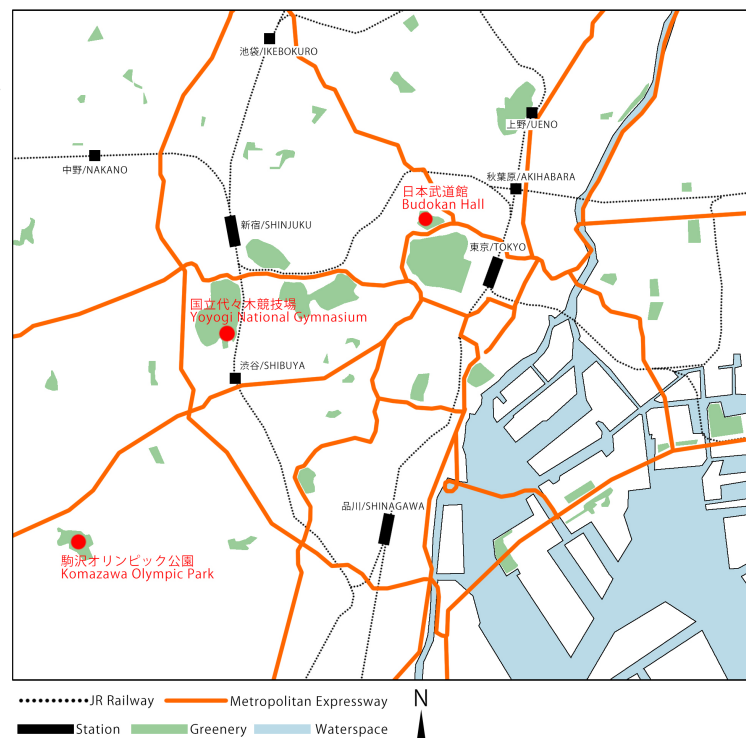


Figure.26 Location of Komazawa Olympic Park, Yoyogy National Gymnasium and Budokan Hall

- 1964 Second Venues Zone for Tokyo 18th Olympic Games
- 1967 Volleybal Venue for 1967 Summer Universiade in Tokyo
- 1970 Cycling course and rigid baseball stadium construction completed
- 1988 Opening of training center under the track and field stadium
- 1993 Opening the Olympic Memorial Gallery. Gymnasium renovation
- 2010 Reunified Olympic Park Management Groups
- 2013 Renovation of Stadium and Gymnasium 68th National Sports Festival 13th National Paralympic Sports
- 2015 Tokyo Caravan Festival Para Ekiden in TOKYO 2015 holding

Figure.28 Timeline of Komazawa Olympic Park after 1964

Resource: Information is collected from Tokyo Sport Benefits Corporation website
Reproduced by Author
<http://www.tef.or.jp/kopgp>

75 TOKYO INFRASTRUCTURE 068 Komazawa Olympic Park, DOBOHAKU, <http://www.dobohaku.com/tokyo>



Komazawa Park under Construction

Resource: Original from 土木学会附属土木図書館 found from (<http://www.dobohaku.com>)

Generally speaking, the Komazawa park has been continuously focusing on sports after the 1964 Games, with venue renovation and improvement projects, it has the capability to hold various events and matches at different scales. As a consequence, the site has become more professional in sports and main venues for hosting national sports.

In recent decade, the focus has a trend to shift towards other cultural events and youth sports issue. One of the cases is the event called Tokyo U-14 International Youth Football Tournament. From 2008, every year (except for 2011)⁷⁶, the event is held in Komazawa Olympic Park to contribute to the enhancement of competitive skills and the cultivation of the youth generation football players through international exchanges. With the good organization, effective partnerships and generous support from sponsors, the event has been held for ten years, and 2018 is the 10th anniversary of this event. The entrance is free of charge every year. Thus the event is open for any people who are interested in football sports and youth sports development and has a characteristic of education charity project. For those teenagers who are interested in football sports but unable to pay the normal entrance fee, U-14 provides them an opportunity to feel the charm of football at the scene. Maybe next young “Kagawa Shinji” will come out from the audience. However, having this regular event held in Komazawa Olympic Park is somehow guarantee the facility use and gain worldwide attention continuously. For sustainability, continuous use is a positive solution for Olympic legacy.

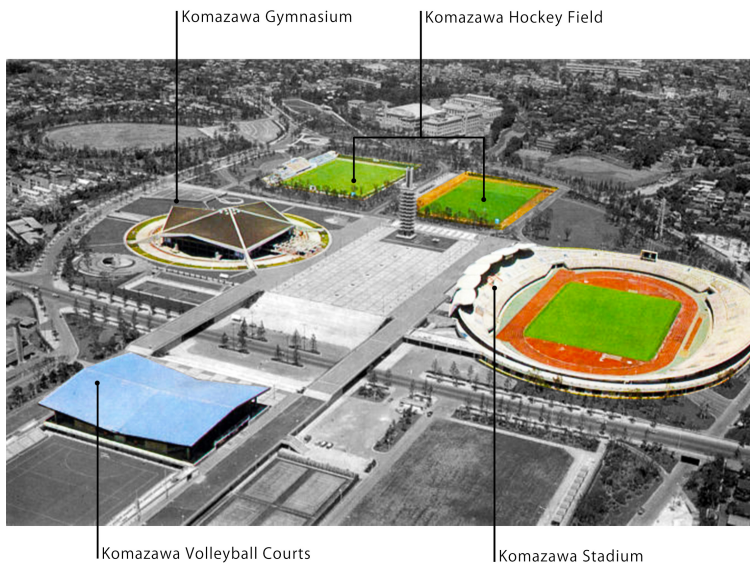


Figure.27 Komazawa Venues in 1964

Resource: Original photo from <http://www.oldtokyo.com/>, reproduced by Author

It is not enough for such a big scale sports complex to have only one guaranteed a regular event to cover all the expense of operation and maintenance. In fact, the whole complex is also available for public and private use at a reasonable cost. By taking advantage of

⁷⁶ The 2011 Tournament was canceled due to Great East Japan Earthquake

being near to the Komazawa university and populated communities, various types of events were often held in the park. Referring to the official Twitter page of Komazawa Park, since joining from 2013, there are 2424 posts in total which mean average post rate is one post per day. The post contents are most related to event promotion, participant recruitment and event recording. The openness to various types of events is helpful to the post-game sustainable development of Komazawa Olympic Park. At the same time, the frequent use of Komazawa Olympic Park is also shown its value in society after the Olympic games and made it become an attractive event space for the whole neighborhood.



With appropriate interventions on venue facilities, good operation and management, successful promotion and cooperation, the post-game Komazawa Park has been turned into a vivid sports park in Setagaya district of Tokyo. And for sure it will keep benefiting the sports development in this sustainable way.



2018 U-14 Tournament Poster
Resource: <http://www.tokyo-u14.com/english/index.html>



Christmas Lighting Up Event 2018
Resource: https://twitter.com/komazawa_park

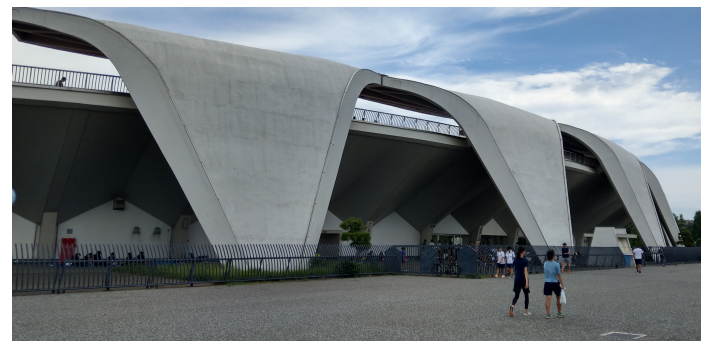


Sports Memorial Day Event 2018 Poster
Resource: https://twitter.com/komazawa_park



1	3
2	4
	5

1. Tennis Court
2. Community Baseball Match
3. Jogging Path
4. Football Courts
5. Komazawa Stadium



Yoyogi National Gymnasium[国立代々木競技場]

The most iconic venue in Tokyo 1964 Olympic Games should be the Yoyogi National Gymnasium designed by famous modernist Japanese architect Kenzo Tange. Dating back to 1930s, the beginning of the Shōwa period[昭和時代]in Japan, the site of Yoyogi National Gymnasium was occupied by the Japanese military as the training ground. After WWII, in 1945 the area was transferred into U.S air force military housing complex, so-called Washington Heights in Tokyo. As Tokyo won the Olympic bid in 1959, with the negotiation with the U.S military, Tokyo government were finally able to choose here to build the venues. While the former U.S military housing complex was decided to be renovated as an athletic village for the 1964 Olympic games. From 1961, the Yoyogi National Gymnasium was under massive construction.

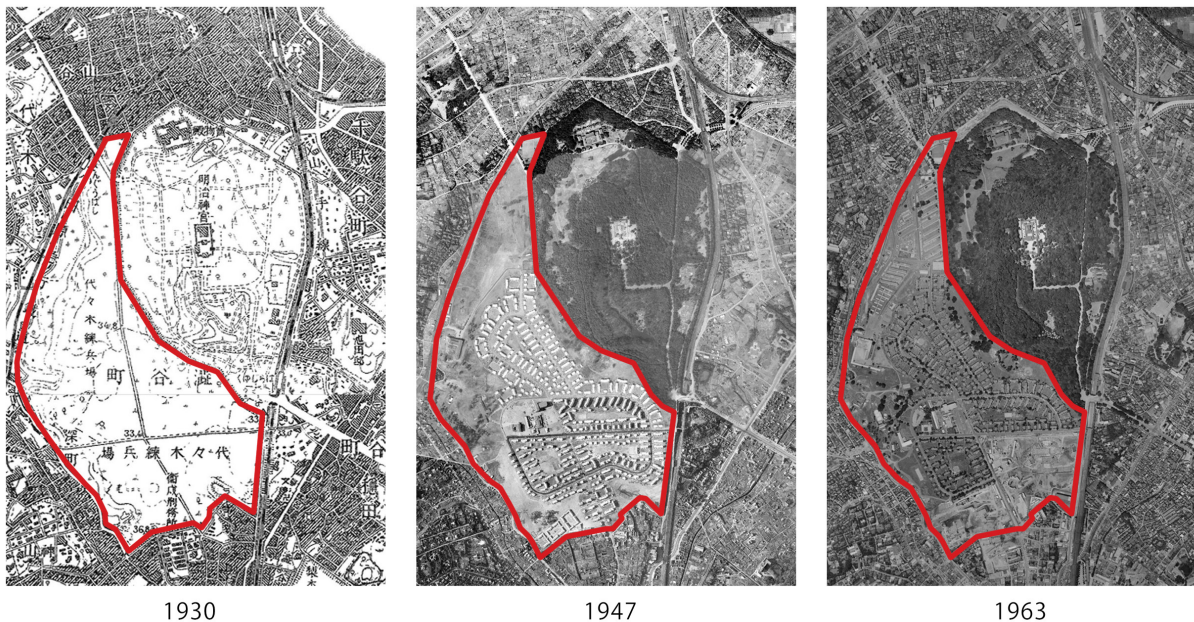


Figure.29 Yoyogi Area Comparison 1930 / 1947 / 1963

Resource: ウェブ地図 Takanori Sato Geography Lab, National Institute of Technology, Numazu College
<http://user.numazu-ct.ac.jp/~tsato/webmap/>, reproduced by Author

There were two buildings with the same design approach which by having a suspension curve roof design, it showed the beauty of structure in architectural form. The main arena was the used for swimming and diving and the separate annex was for basketball competition. The outstanding design and excellent engineering performance have made the Yoyogi venues become one of the most influential architectures in 20th century in Japan.



Figure.30 Yoyogi Area Division in 1990
 Resource: ウェブ地図 Takanori Sato Geography Lab,
 National Institute of Technology, Numazu College
<http://user.numazu-ct.ac.jp/~tsato/webmap/>
 Reproduced by Author

Undoubtedly, the venues were preserved as one of Olympic symbols of Tokyo games and undertaken the national Olympic memory. However, by taking the chance of hosting games, the former U.S-occupied land was back in charge of Japan finally. While, there was a question. Since before, the site was used for armies for long time, and it has been isolated from the surroundings in physical form and social life. There was a need to give a proposal for the post-game area plan. As a consequence, a series of projects nearby the Yoyogi Gymnasium were launched for regenerating void space into something normal in Tokyoites' life.

As a matter of fact, the Yoyogi area is right next to the famous royal shrine, Meiji Shrine, which is one of the most important holy places for Japanese royal family since its build in 1920[the present one was rebuilt in the 1960s by following the original design], the shrine is located in the center of a vast area of forest in Shinjuku. After the 1964 Olympic games, one solution for regeneration is to make a connection to the Meiji Shrine area. Later on, the majority part of the Olympic village was replaced by grasslands, newly-planted trees and other landscapes. Two years after, in 1967, the transformed Olympic village was re-open to the public with a new name called Yoyogi Park. Besides the construction of the park, in the west of Gymnasium, the other outdoor sports training facilities were built up as well. Separated by the avenue going across the area, route 413 usually known as Inokashira Doori[井の頭通り], the northern area had perfectly connected with Meiji shrine park and together formed into one of the largest leisure green space in the Tokyo city center. While by taking advantage of the closure to Yoyogi Gymnasium, outdoor sports facilities and NHK TV Station, the south area has become a bright space that is suitable for various organized events. Nowadays, the Yoyogi

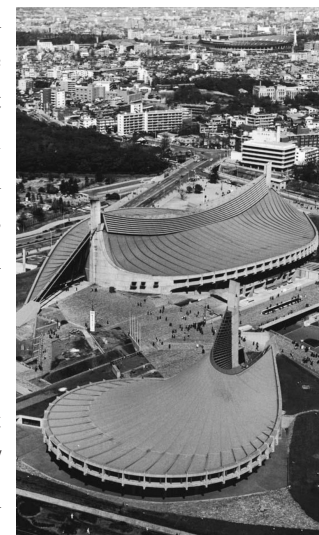
park is one of the most famous tourist attractions in Tokyo travel guide, but comparing to its neighbor, Meiji Shrine, Yoyogi park is the place for people who live nearby rather than tourists. In the northern part, the park is crowded almost every weekend. Moreover, in the opposite side, apart from regular use of outdoor football and tennis training courts, from time to time, various events like a street food market, street music festival, Christmas illumination festival and so on are held here. As production of post-1964 Olympic Games, the right plan has made it become long-term benefits for local life. It is hard to get bored when staying in Yoyogi park.

Not only the legacy park is a success, also the gymnasium's transformation process is also interesting. After the

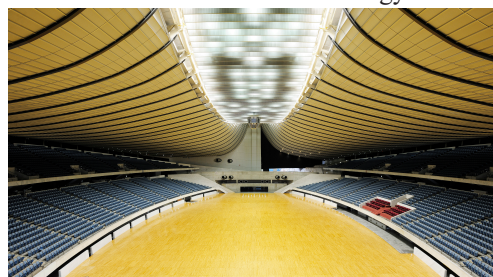
Tokyo Olympic Games, at the 1st gymnasium pool function was kept in the summer while in winter, it would turn into a skating court open to public. Also, it is possible to use as a gymnasium by putting the floor over the pool. In fact, the flexible use of floor is oriented from the basic plan at the beginning of construction. And it ensures the effective use of gymnasium as a multipurpose facility in future,⁷⁷ for instance, the host of International Figure Skating Competition in 1972, The 37th World Table Tennis Championships in 1983, National High School Volleyball Championship in 1985 and so on. And starting from 1983, the venue started to open for cultural events as well. When there was no event, the arena was also open to the public as swimming pool, skating court or even places for conference and concert.

At present, the two arenas are under renovation work and preparing to hold part of the 2020 Tokyo Olympic Games. However, the Yoyogi park and training facilities are always available and affordable for different purposes. There are four outdoor football courts open to the public, with the minimum cost of 7,200 yen/h (around 72euro/h) for one court. Besides, training courses and regular football matches are also organized regularly here. It is a quite popular place for football fans nowadays in Tokyo city center. With the continuous use of all Yoyogi Gymnasium facilities, the whole sports complex created since 1964 has made its countless value to the city and its sports development. One thing that should be not overlooked is that the gymnasium can be transferred for adapting various use, but the sustainable way should consider the social sports background. For Yoyogi gymnasium, turning into the playgrounds for swimming, skating and football is the right choice as all of these sports are popular among Japanese.

Nowadays, with the excellent accessibility from Shinjuku, Harajuku and Shibuya these three famous fashion commercial districts, the Yoyogi sports complex and the park provides an excellent meeting point. Different people, cultures and many other things meet here with others, which creates hundreds of thousands of plans, ideas and proposals. Today's Yoyogi is the most vibrant area in the west Tokyo city which is formed by sports event but contributes much more to all the other social aspects.



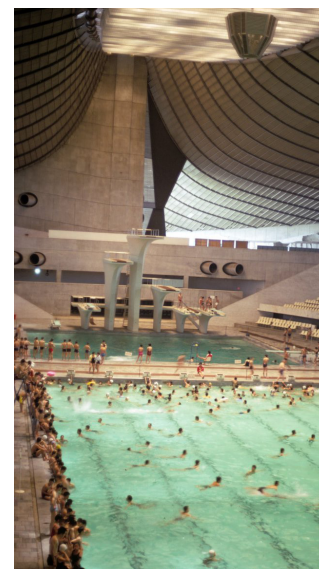
Yoyogi Gymnasium in 1964
Resource: <https://www.olympic.org>



Yoyogi Gymnasium in floor mode
Resource: <https://www.jpnsport.go.jp>



Yoyogi Gymnasium in 2012 ISU World Team Trophy
Resource: <https://tokyo2020.org>



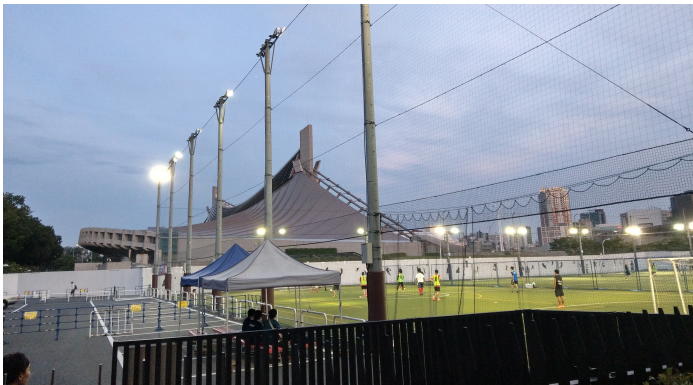
Yoyogi Gymnasium in pool mode
Resource: Intrepid Sea, Air & Space Museum

⁷⁷ 国立代々木競技場の歴史詳細, <https://www.jpnsport.go.jp/>



2	1
3	
4	5

1. Yoyogi National Stadium
2. Yoyogi Second Arena
3. Stage In Preparation In Yoyogi Park
4. Football Courts Beside Yoyogi National Stadium
5. Yoyogi Park Main Street



Budokan Hall[日本武道館]

Budokan Hall[日本武道館] is one of the main venues in 1964 Games which has an evident traditional Japanese feature located in the Kitanomaru Park, right next to the Imperial Palace in Tokyo. The name of Budoo[武道] refers to the term of traditional Japanese Martial Arts. The traditional Japanese Martial Arts includes Judo, Kendo, Karate, Aikido and other fighting arts. It is inspired by the Yumedono in Horyuji temple in Kyoto. Design in octagonal form in plan and the roof design is an interpretation of Mountain Fuji. Budokan Hall was completed in March of 1964 by a financial donation from the Japanese Emperor⁷⁸ and used for Judo competition in the 1964 Tokyo Olympic Games.

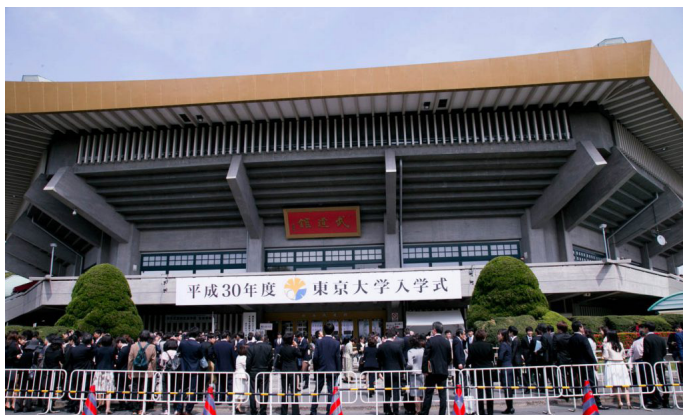
The original purpose of Budokan is to host martial arts events in Japan and to hold the judo competition was the first official event in Budokan. After the Olympic games, the Budokan was turned to be a facility for various Budoo events and other professional wrestling events. However, because of its unique and convenient location and its architectural interpretation of Japanese budo spirits, Budokan Hall is considered a symbolic building of Japanese culture and spirits. There is a common sense in a society that it is glory for any Japanese to participate in the events held in Budokan. Having the opportunity to organize or participate in the events in Budokan is somehow the best recognition of someone's achievements and success. With this kind of thinking, Budokan has been recognized as the most meaningful place in Japanese hearts. Thus, for this 1964 Olympic legacy, there was no worry about management and financial issue.

Once the venue was open, the events were held continuously inside it. Not only the sports event such as Martial Art Tournaments were held, but also the cultural events were also popular to choose Budokan as a performance stage. Since the 1970s, more than 100 music groups and singers from all over the world have had concerts in Budokan, including bands like The Beatles, Queen, etc., singers like Diana Ross, Mariah Carey, Maaya Uchida, etc., and idol groups like AKB48, Berryz Kobo, etc. Besides the music concerts, the Budokan is also used as a place for culture exchange, promotion and education purposes. Based on Budokan Hall, a Budo Academy was funded for Budo culture education and promotion. The purpose is cultivating human beings who can improve their personality, improve their insight and contribute widely to world peace and friends through training through martial arts technical training. Teenagers from elementary, junior high school, high school and general citizens are all welcomed to practice seven martial arts classes(Judo, Kendo, Karate, Aikido, Shorinji Kemen, Naginata, Kanji).⁷⁹ By having this academy, the Budo culture can be inherited in a better way in Japanese society.

78 <http://www.nipponbudokan.or.jp>

79 武道の振興・普及 <http://www.nipponbudokan.or.jp/>

As a symbolized place of Japanese spirits, apart from sports and cultural events, Budokan is also selected to hold some formal events. The National Memorial for War Dead[全国戦没者追悼式] is held with the attendance of the Prime Minister, the Emperor and the Empress annually in Budokan on August 15, the day of Japan's surrender in WWII. Also, many universities in Japan, like the University of Tokyo, the Toyo University, Meiji University, etc. would like to hold its entrance ceremony in Budokan every April. In Budokan, the freshmen will receive the best wishes from their families, colleges and universities, at the same time, they are reminded by the speech, the scene, the universities and everyone presented there of their power, the meaning of their lives and responsibility in future.



Heisei 30 year, University of Tokyo Entrance Ceremony in Budokan
Resource: <https://kimino.ct.u-tokyo.ac.jp>



The National Memorial for War Dead in 2018
Resource: <https://www.tokyo-np.co.jp>, Photographer: Awaji Kuki



National High School Kendo Tournament in 2018



Aimer's Concert in Budokan, 2017
Resource: <https://www.moshimoshi-nippon.jp/>

In fact, the Budokan as a symbolic place of Japanese Budo Spirits does not strictly stick into traditional Japanese arts and sports. Instead, all kinds of cultures and art styles are welcomed which brings the diversity and vitality for this Olympic legacy. To a short brief conclusion of Budokan case, it is a relatively successful work of 1964 post-game development. One thing we could not ignore is that the primary purpose of Budokan is to create a place for traditional Japanese Martial Art instead of a venue for Judo competition in 1964. That is one of the reasons why in over 60 years of post-game time, the Budokan is always functional effectively and used properly. Also, another important reason is its successful interpretation of Japanese spirits by holding various events has made it become symbolized in Japan that everyone would dream to make their events there. All of these contribute to the Budokan continuing vitality. Moreover, Budokan will hold Judo and Karate competition in 2020 Tokyo Olympic Games.

Shinkansen and Shuto Expressway[新幹線と首都高速道路]

As a matter of fact, for Tokyo, using the chance of hosting Olympic Games as a statement of Japanese re-emergence to the world after WWII was the initial goal. Whilst, the Olympics are a driving force of infrastructure and urban development as common sense, Tokyo also took this opportunity in 1964 to focus on the growth and infrastructure upgrades. Tokaido Shinkansen High Speed Railway and Shuto Expressway are the best proves.

Opened on the October 1st of 1964, the Tokaido Shinkansen was the world's first high speed railway line and started to provide regular services among Tokyo, Nagoya, Kyoto and Osaka, the four main cities in Japanese Honshu Island. The opening time was planned to be just 9 days before the opening ceremony of Tokyo 1964 Olympic Games as a declaration of Japanese infrastructure achievement to the world. The train was run at the speed around 210km/h at that time. Since its inauguration in 1964, approximately 5.6 billion people have used the Tokaido Shinkansen, the transportation artery linking Japan's three largest metropolitan areas, Tokyo, Nagoya, and Osaka. The Tokaido Shinkansen has literally supported Japan's economic growth.⁸⁰ However, the primary plan and proposal of high-speed train can date back to 1930s, the Japanese Government Railways draws up plans for a high-speed train line, with newspapers naming it the Dangan Ressha (bullet train) Project.⁸¹ Coincidentally, in the same year of successful bid of 1964 Olympic games, the first shinkansen started its construction in 1959. The project of shinkansen was launched before the successful bid of Games, but there could be the hypothesis that it would probably take more time to finish the construction of first shinkansen without the hosting of Games. "Tokyo was chosen to host the 1964 Olympics in 1959, just 14 years after the end of the war. We were much poorer then than we are today," said the Prime Minister Shinzo Abe, "But Japanese back then were passionate about

⁸⁰ <https://global.jr-central.co.jp>

⁸¹ The Shinkansen Turns 50: The History and Future of Japan's High-Speed Train, Nippon.com, Oct.1 2014



The inauguration of the Tokaido Shinkansen – in time for the Olympics
Resource: A Look Back: The 1964 Tokyo Olympics, <http://jpninfo.com>

hosting the Olympics in Tokyo, and that passion fueled the success of the games.”⁸² Probably, that’s one of the reason for the effective work of construction, the passion. Nowadays, over 50 years has been past, the shinkansen is now operating in a metro-similar model with 365 train services per day, transport of 452,000 passengers each day and availability of 1,323 seats/train.⁸³ With high-speed railway transportation, cross-regional work becomes possible for Japanese workers. The metropolitan surface is going to be expended by taking advantage of this infrastructure upgrade.

Shuto Expressway is another infrastructure project launched before the Tokyo Olympic Games. The actual construction of Shuto Expressway began in 1959, the first section connecting from Kyobashi to Shibaura was opened in 1962. Two years after, in order to serve for the Tokyo 1964 Olympic Games, the Haneda Airport and Tokyo Olympic Venues were connected by the newly-constructed expressway. There were some debates about the construction of Shuto Expressway, especially when Japan was under the recovery period from WWII. In the 1960s, the total population was around 9 million in Tokyo, the number of private cars was keeping increasing at the speed of 10,000/month. It could foresee that if there were no solution or preparation for this traffic flow, the roads in Tokyo would become the parking lots. Construction of the highway was promoted all at once at this great opportunity of the Olympic Games.⁸⁴ In fact, with the successful bid, the construction process of Shuto Expressway was going smoothly with the cooperation and understanding from the residence. As a result, the Shuto expressway became an important transportation route between venues and city center and contributed greatly to the successful host.⁸⁵

Since the 1960s, during the over 50 years of development, the Shuto Expressway has been completed and provided a high-efficient transport route for Grand Tokyo Metropolitan. Its coverage space has also been extended from central districts to other nearby municipalities. Figure 31 is a diagram collection showing the development of Shuto Expressway in recent 50 years. Today, if someone wants to travel in a fast and private way in Tokyo,

⁸² The 1964 Tokyo Olympics: A Turning Point for Japan, Alexander M., The Wall Street Journal, Sep 5, 2013

⁸³ Information is collected from <https://global.jr-central.co.jp> and data resource from 2016

⁸⁴ 東京オリンピックの遺産 2 街路 首都高速道路 羽田空港 東海道新幹線 東京モノレール、鈴木伸子、【シリーズ】世界からつどう未来への遺産（第4回）、April 2007.

Original texts: 東京オリンピック時の東京の人口は 900 万人。昭和 39 年 7 月に自動車の登録台数は 100 万台となり、月 1 万台ずつ増えていく状況だった。昭和 30 年代の初頭から、このままでは東京の自動車交通がパンクするのは目に見えていた。街路だけでは、この交通量はとてもさばけない。オリンピックというこの絶好の機会に、高速道路の建設も一気に推し進められた。

⁸⁵ オリンピックと東京改造 交通インフラから読み解く、川辺謙一、光文社新書、2018

Original texts: また、結果的に首都高は 1964 年大会の重要な会場輸送ルートとなり、その成功に大きく貢献した。

obviously, Shuto Expressway is a wise choice for saving time.



Figure.31 Shuto Expressway Development
 Resource: Shuto Metropolitan Expressway Company Limited Website
<https://www.shutoko.co.jp> , reproduced by Author

Nowadays, Japan is connected by vast network of shinkansen and Tokyo Metropliotan is linked by Shuto Expressway. When travelling today, we actually enjoy the benefits from the lasting 1964 legacies. Even the infrastructure projects were both launched before Games, the Olympic Games actually speeded up the development of these two infrastructures especially at the primary phase. And



Connecting between Haneda Airport & Tokyo Olympic Venues, 1964
 Resource: <https://www.shutoko.co.jp/>



The inauguration of Rainbow Bridge to Odaiba, 1993
 Resource: <https://www.shutoko.co.jp/>



The inauguration of Central Circular Route between Bay Shore Route and Route 3 (Shibuya Line), 2015
 Resource: <https://www.shutoko.co.jp/>

with great contribution to the Olympic Games, the projects were able to gain more recognition and investment worldwide and finally formed this one of the most advanced and convenient transportation networks on earth.

Conclusion:

In a short conclusion, today's performance of 1964 legacies is an excellent sample that worth to be studied and interpreted. First of all, the separate venues distribution as the unique characteristic of the Tokyo 1964 Games. This distributed plan minimized land acquisition surface for new construction and avoided the potential conflicts between government and citizens. It has benefited the metropolitan area for a long time and contributed to the significant infrastructure improvement projects in Tokyo and Japan. Second, the positive, frequent and adaptive use of venues in post-game time secures the long-term venue's operation and maintenance as the venues have always been presenting the whole society their values as the existence of iconic architectures, as the carriers of collective memories and as the facilities for daily lives. Third, a single venue is nothing more than an architectural space, and what makes this architectural space vibrant is people. The intangible legacy plays an important role in Tokyo's 1964 post-game cases. The success of Japanese athletes in 1964 subsequently led to the establishment of sports clubs and training centers and spread sports throughout the country.⁸⁶ The mass sports foundation has been gradually formed. With the increase of public interest in sports, it is natural to make full use of former Olympic facilities to meet the public demands. All of these points mentioned above are contributing together to the post-game sustainable development of 1964 Tokyo Summer Olympic Games, even though there was not much awareness of sustainability. However, in fact, the venue planning and operation and the public enthusiast to sports ensured the environmental sustainability and social sustainability, and, based on these two, to reach the economic sustainability is not a big deal anymore.

Nowadays, when people walk in the Tokyo, it is always seeing people doing sports in the park, training themselves on the fields, queuing for events, driving on the Shuto Expressway and riding shinkansen for trips. The 1964 Legacies have become the part of Tokyo daily life that every Tokyoites belongs to. No matter if people are aware of those legacies or not, people are always enjoying the benefits from 1964 in Tokyo. Also, for venues, being famous, used and crowded should be the right scene that a wonderful Olympic legacy presents to us. Thus, "Living Legacy" is the best description. The legacy lives with people and time.

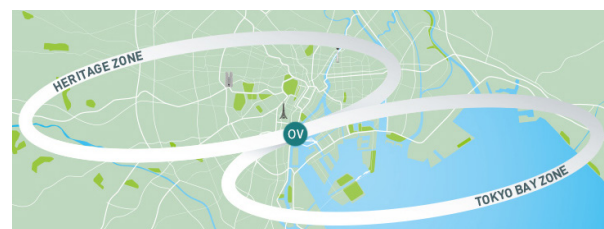
⁸⁶ Tokyo 1964 Creates Lasting Legacies, IOC News, Oct.10 2014

4.2.2 2020 Post-game Tokyo Image

“Achieving the same level of environmental, social and economic legacy is our ultimate aim for 2020” said Tokyo 2020 CEO Toshirō Muto in 2014.⁸⁷ It sounds ridiculous, but it truly reflects how successful the 1964 post-game planning and management is. Since 2013, the year of successful bid of 2020 games, five years have been passed. During these years, by following the initial candidature file, the preparation works are being carried out in order. Many points and discourses related to the post-game planning are raised during this period, as it is commonly agreed now, for reaching an acceptable post-game sustainability performance, a visionary start is compulsory. To be honest, no one can foresee the real performance of 2020 post-game sustainability performance at this moment, but some cases happened and strategies released can help us to figure out a little bit clear 2020 post-game Tokyo sustainability image.

Venues and post-game plan in 2020

The concept of venue plan for the 2020 Tokyo Summer Olympic Games is named as “Infinite Excitement.” The name is coming from the general venue distribution form in Tokyo metropolitan area, and there are two thematic and operational zones forming the shape of the infinite sign in mathematics which define the Tokyo 2020 Venue plan into two parts: Heritage Zone and Tokyo Bay Zone. The intersection of two zones is the location for the new Olympic village. Being influenced by the experience and plan from 1964, the 2020 Olympic games venue plan still follows a separate distribution. In 2018, after the final approval of the football match venue plan from IOC, the 2020 Tokyo Olympic Games venue plan is official finalized.⁸⁸



Venue Plan Concept Map
Resource: <https://tokyo2020.org/en/games/venue>, modified by

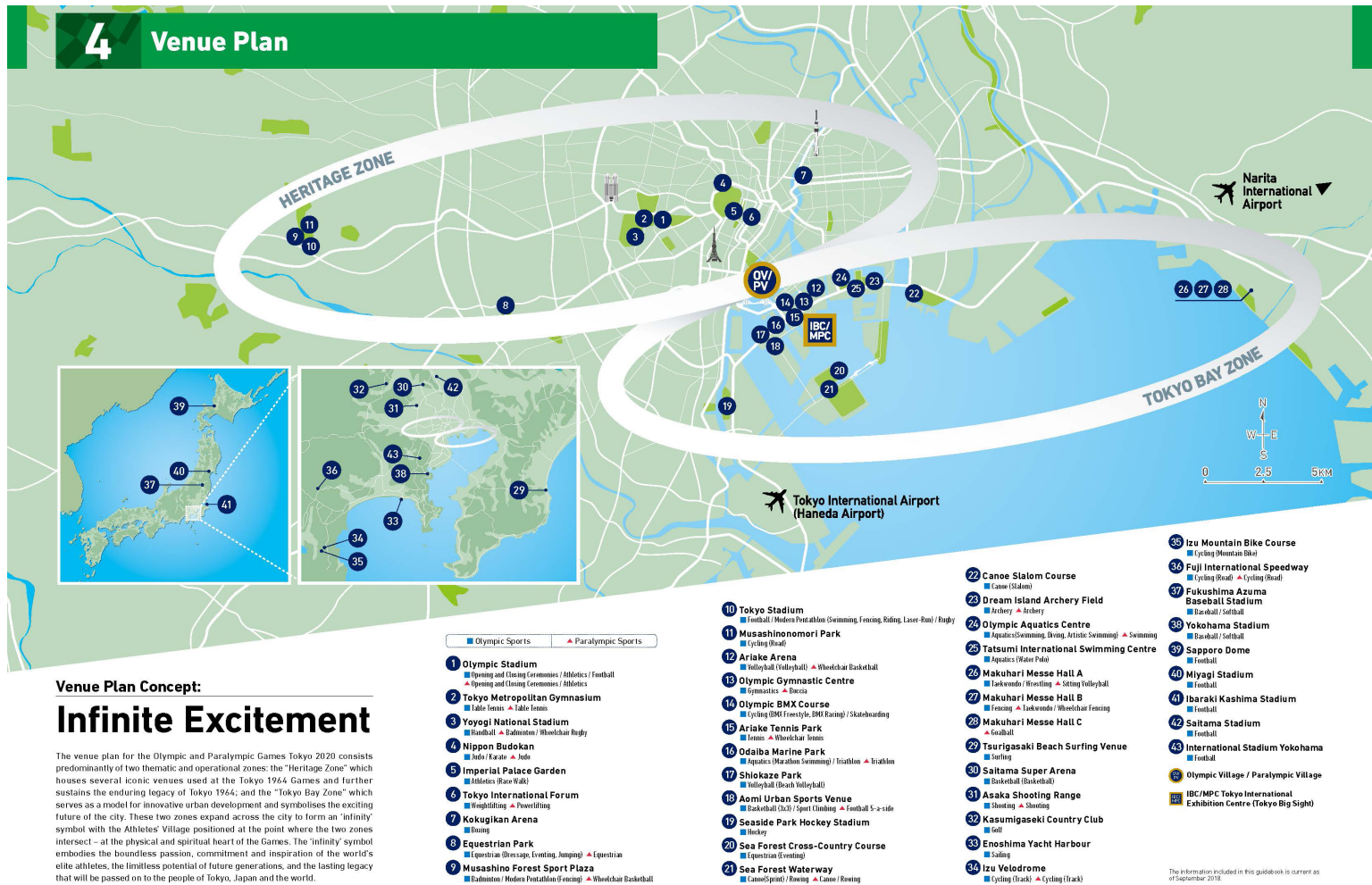
According to the fixed plan, there are 43 venues in total, including 25 existing, ten temporary and eight permanent new venues which were decreased from 11 in the previous plan. As a result, more than half of the venues in 2020 Tokyo Olympic Games will be the reuse of existing venues which directly leads to the reduction of more than 200 billion Yen (around 2 billion euro) in costs. At the same time, it is also a positive reaction of Tokyo Organising Committee of the Olympic and Paralympic Games(TOCOG) to the updated Olympic new policy, the New Norm, which was announced by the IOC in February 2018 and contains a number of suggestions for the more efficient hosting of Games including the increased use of existing venues.⁸⁹ In total 43 venues in use, 16 venues are outside of Tokyo area mainly holding cycling, baseball and football competitions. Among the 16 venues, some are located

⁸⁷ Tokyo 1964 Creates Lasting Legacies, IOC News, Oct.10 2014

⁸⁸ All Olympic and Paralympic Games Tokyo 2020 Venues Approved, TOCOG, May.2 2018

⁸⁹ All Olympic and Paralympic Games Tokyo 2020 Venues Approved, TOCOG, May.2 2018

in Ibaraki, Miyagi and Fukushima prefectures which suffered severely from 2011 Great East Japan Earthquake and Tsunami. By involving other communities into competition hosting, TOCOG wants to spread all the excitement of Japanese rehost across the country and tries to connect people from different areas with sports. That is one of the goals of the 2020 Tokyo Olympic Games.



In the heritage zone, there are total 11 venues including the three existing legacies from 1964 Olympic Games: Tokyo Metropolitan Gymnasium; Yoyogi National Stadium; and Nippon Budokan. It is a good way for enduring the legacy from 1964. For some reasons, two important legacies, Nation Stadium and Komazawa Olympic park are missing. Due to the frequent attacks of earthquakes in Japan, the National Stadium has occurred some risks in structural stability and the capacity of around 50,000 is not enough to meet the requirements of IOC about the main Stadium for hosting the opening and closing ceremony. As a consequence, the Japanese government decided to build up a new stadium in the precisely same site. For the Komazawa Olympic Park, it is hardly to empty the park for the renovation projects for 2020 Tokyo Olympic Games and the neighborhoods would not accept the loss of Komazawa park for a certain long time as the park has been part of their daily life. Instead of losing its identity for the neighborhoods, the Tokyo metropolitan government made the right decision to leave the Komazawa park as it has been so far and serve for the people who use and need for long-lasting. The other venues in the heritage zone are built for different events and communities after the 1964 Olympic games. One of them is the Ryogoku Kokugikan Arena[両国国技館] which was built up in 1985 for Japanese quintessence sports, sumo wrestling. As planned, in 2020, it will be “borrowed” to hold the boxing event.

In general, the proposal of effective reuse of existing venues for 2020 contributed not only to the successful bid but also to reducing the cost of construction and enduring the legacies from 1964. It is also convenient for the post-game plan that after the 2020 Olympic games, those venues will be back into their roles to keep serving for the neighborhoods usually with renovated and refreshing equipment of Olympic standard. Also, in a better hope of creating new Olympic legacies for tomorrow’s generation based on existing ones.

While in the Tokyo Bay zone, 17 venues including the temporary venues were proposed to be newly built. As described in the candidature file, “developed as an area respecting water, green living and biodiversity, creating a zone with strong appeal for Tokyo’s future development”⁹⁰ is the main proposed of having Tokyo Bay zone? As for this large young artificial territory in Tokyo, it could be considered as a good testing bed for new proposals and opportunities. For the Tokyo metropolitan government, having an Olympic events plan goes align with Tokyo city vision is an excellent opportunity for catalyzing the development of the Tokyo Bay area into a future city image. By inserting the majority of Olympic events, the Tokyo metropolitan government hopes it will enhance the transportation infrastructure, present the achievement so far and attract interest from people in the future. However, the Tokyo bay zone looks still far away from the typical image of the living community, so far the scenes in Tokyo bay zone are more like district for exhibitions, events, innovative industries. Time is needed to check if the 2020 Tokyo Olympic Games can bring something different to the area.

90 Overall concept of the Olympic Games, Tokyo Candidature File, 2013, p.16

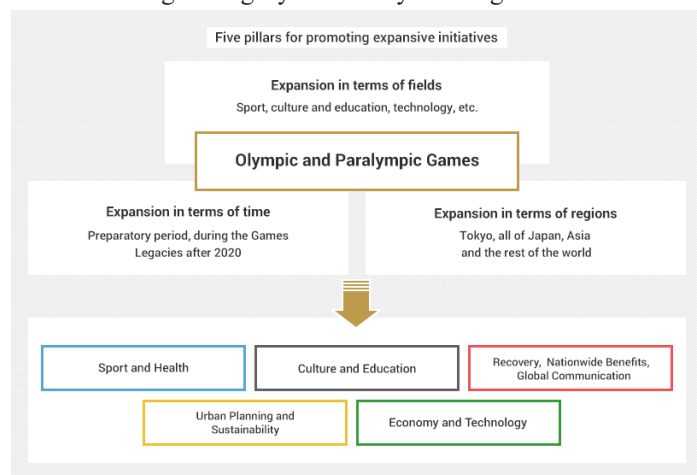
The venue plan of 2020 generally follows the experience of 1964 Tokyo venue plan. On the one hand, it is a natural outcome under the IOC's enhancement and continuous focus on Olympic sustainability and Olympic legacies. On the other hand, it is the advantage of Tokyo to make full use of 1964 legacies and experience for creating a new sustainable Olympic today comparing to those cities have nothing to learn from themselves. The venues are the physical legacies that require the fulfillment of intangible legacies for ensuring the long-term vitality. And TOCOG clearly understands this relation and establishes the Olympic Legacy Committee which will lead and coordinate the development, delivery and on-going use of the physical legacies in the city and would also assess and advise on all local, national and international 'soft' legacies from the Tokyo 2020 Games: in sport, education, environment, social policy and elsewhere.⁹¹ Generally speaking, the Olympic Legacy Commission in Tokyo is relatively similar to the London Legacy Development Company. With the fund of Olympic Legacy Commission, Tokyo would like to reach the goal in post-game development, the revitalization of a new heart of Tokyo. Venues and facilities in a total of 21 buildings are located in the new heart of Tokyo, the revitalized Tokyo Bay area as in Tokyo city's long-term plan which will bring new leisure areas, new sports facilities and various entertainment activities to the area in the future. In the end, to form new vivid space for community and activate the new life.

About the detail legacy plan of Tokyo 2020 Olympic Games, in 2016, the TOCOG released the Tokyo 2020 Action & Legacy Plan 2016 which figured out working direction and methods. To ensure the long-lasting legacy from 2020, Olympic Legacy Committee will work closely with various stakeholders to promote a range of comprehensive actions from the initial stages of planning in the five pillars: Sports and Heath; Urban Planning and Sustainability; Culture and Education; Economy and Technology; Recovery, Nationwide Benefits, and Global Communication. So far, even though now Tokyo is at the Olympic preparation period, many actions are taken to promote awareness of post-game legacy. One of the cases is the educational programme "Yoi, Don"[用意、ドン]. The original meaning of "Yoi, Don" in Japanese is preparation and start which is usually used before the game, more likely to the term of "Ready, go" in English but officially translated in "Get set, go." The programme aims to help children grow as they experience and learn the values of the Olympic Games and the power of sports.⁹² Until September 1, 2018, 16,232 schools in 47 prefectures across Japan have obtained official authorization for their Olympic and Paralympic education programmes. These schools will have access to related educational materials, and children will be able to take part in unforgettable events including interacting with athletes and the Tokyo 2020 Mascots and trying out various sports for themselves. Also, the "Yoi, Don" programme will involve children as well as their parents in various activities related to the 2020 Tokyo Olympic Games such as mascot

91 Vision, legacy and communication, Tokyo Candidature File, 2013, p.8

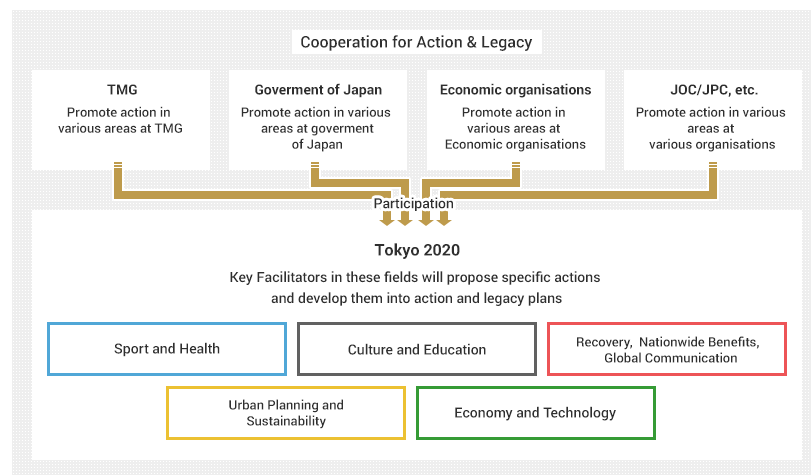
92 What is the Tokyo 2020 Education Programme "Yoi Don!?", TOCOG

voting. Connected by children, the parents will also have more chance to meet with each other and exchange their thinking about the 2020 Tokyo Olympic Games. By launching “Yoi, Don” programme and making use of sports, the Japanese government would like to educate the young generation the lessons about confidence and encourage appreciation for diversity, and active and proactive participation in society. Activating the young generation mind with the influence of Olympic Spirits and forming a general national character for one generation will be the most valuable intangible legacy from Tokyo 2020 games.



Expansion in Terms of Fields
Resource: <https://tokyo2020.org>

As written in the Tokyo 2020 Guidebook, leaving legacies to reform Japan’s mature society is the ultimate target. “The Tokyo 2020 Games will leave a valuable legacy that will bring about a new evolution in Japan’s mature society. The legacy will take form in tangible and intangible ways, including barrier-free accessibility throughout our communities, a healthy lifestyle promoted through sport, becoming a world leader in sustainability and environmentally friendly initiatives, and communicating Japan’s arts and culture to the world.”⁹³ At this moment, we are unable to estimate the real performance and influence of post-2020 sustainability strategies, but what we can ensure now is Japan has fixed the work routine and final destination and is on the way.



Cooperation for Action & Legacy
Resource: <https://tokyo2020.org>



Mascot Voting Promotion
Resource: <https://education.tokyo2020.org>

New National Stadium[新国立競技場]



Former National Stadium

Resource: <https://www.ausleisure.com.au>



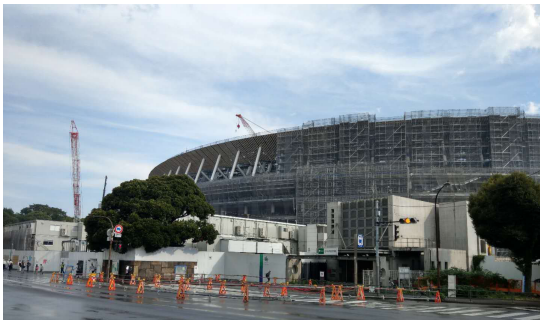
Initial New National Stadium Design by Zaha Hadid

Resource: <https://www.designboom.com/>



New National Stadium

Resource: <http://kkaa.co.jp>



New National Stadium Under Construction

The new National Stadium is located in the same site of the former one, designed and constructed by Kengo Kuma and Associates(KKAA), Taisei Corporation and Azusa Sekki Co., Ltd. As mentioned before, old National Stadium was removed because of structural risk and lack of capacity. In my opinion, there is another reason. The old National Stadium carries the great memory of the best time of Japan in the 1960s and 70s, while, since late 1980s, due to the collapse of the Japanese bubble economy, Japan has been going downhill in the economy. “Golden Time” has never returned. Today, the Japanese society is still under the recovery of “bubble economy” and facing new other social challenges as well, such as low birth rate, aging population and low desire society phenomenon.

To some extends, Japan needs something new to stimulate the population and the whole society. As a result, the construction of a new National Stadium which will carry the glory Japanese Olympic memory in the 21st century is proposed.

The first proposal was coming from British-Iraq architect Zaha Hadid with a relatively exaggerated form which shows strong her personality and style as usual. Unfortunately, the design was denied by the Japanese government. “We have decided to go back to the start on the Tokyo Olympics-Paralympics stadium plan, and start over from zero,” said the prime minister, Shinzō Abe, after a meeting at his office with Yoshirō Mori, chairman of the Tokyo 2020 organizing committee.⁹⁴ When the Zaha’s project was released, there were some comments as “a disgrace,” “ridiculous” and “gigantic white elephant.” A petition was launched calling for the project to be scrapped leading

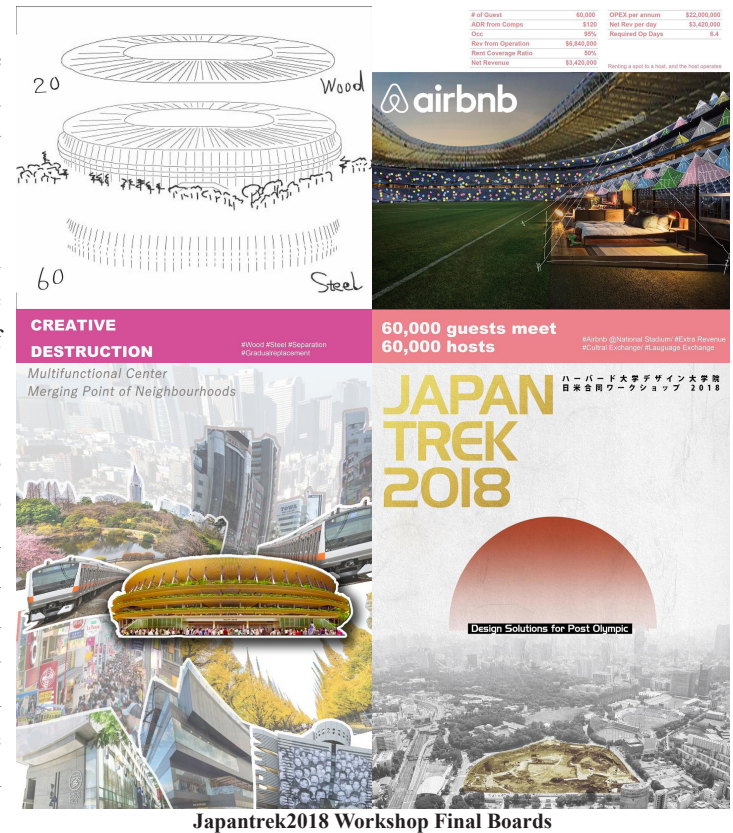
⁹⁴ Japan scraps Zaha Hadid plan for Olympic stadium, Owen Gibson, The Guardian, Jul.17 2015

by a group of Japanese architects including Fumihiko Maki, Toyo Ito, Kengo Kuma, etc. Undoubtedly, the project was canceled and Zaha made the following defense or complain that “They(Japanese) do not want a foreigner to build in Tokyo for a national stadium.”⁹⁵ In the end, the new National Stadium now under construction is the design from Kengo Kuma. The flat roof and wooden deck surrounding the façade are the sale points. As planned, the wood material of the New Stadium will collect from all over Japan and involve more people living outside Tokyo enjoying the Olympic preparation time, at the same time, it is considered as a symbol of unity.

If we look at Kengo Kuma’s design today, the Japanese government seems to make the right decision to revise the Zaha’s design. Comparing to Zaha’s one, the new stadium is relatively simpler in a smaller form and has an interpretation of the traditional Japanese architect by adapting wooden material. The new stadium is closer to the surrounding environment which means the less impact on the environment and easy adaptation for post-game time. Last but not least, the most important concern is the decreased budget as for many failure cases mention in Chapter.2, if the economic sustainability cannot be guaranteed, the project will probably go into a sad ending after game celebration.

During my stay in Tokyo, I had an opportunity to participate in a joint workshop between the University of Tokyo and Harvard Graduate School of Design. The topic is the post-game adaptive use of the new national stadium. Within two-day workshop time, the students should present their innovative ideas for the use of the new National Stadium. The tutor gave some lectures on the first day of the workshop and mentioned about the social property of Olympic legacy which is to benefit the society in a long-term, so the legacy plan should offer a solution to the social problem. As we are young enough to be brave, many “crazy” ideas were proposed, such as transferring the Stadium into an Airbnb to provide affordable housing for tourists, a Japanese bath shop for people in the center of Tokyo[お風呂屋さ], turning into a nursery and rehabilitation center for the aging people and so on. From our understanding, the national stadium provides a defined enclosed space with infinite possibility. Many proposals did not get stuck into the inertia thinking of turning it into something for sports. Instead, our proposals were more

⁹⁵ Japan scraps Zaha Hadid plan for Olympic stadium, Owen Gibson, The Guardian, Jul.17 2015



JapanTrek2018 Workshop Final Boards
Resource: Instagram #GSDJapanTrek2018 (For full boards please search tag

concerned about the normal daily life in Tokyo as from our minds, the legacy should serve for the people who live there in a practical use way and mitigate the social problems.

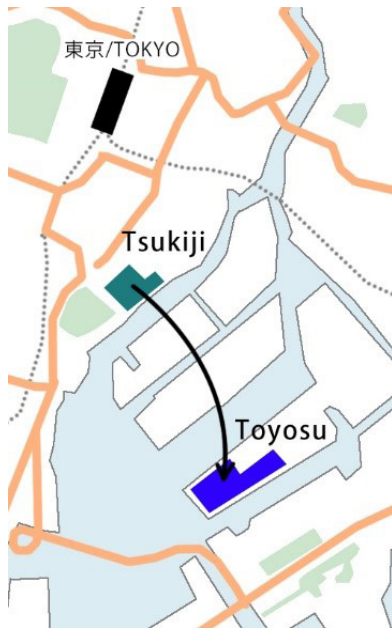


Figure.32 Tsukiji Relocation

Is Tsukiji Fish Market necessary to relocate?

During preparation time, there was an interesting topic arising lots of discourses in Tokyo, that the relocation of Tsukiji Fish Market. As one of the most famous fish markets in Japan, Tsukiji originally means the reclamation land in Japanese which indicates the market is built upon a reclamation land. The market is divided into two parts, the inner parts for business trade and the outer part is the street market for usual retailers. For nearly 80 years, the Tsukiji market has been developed into one of the most famous tourist attractions in Tokyo. However, the old market was supposed to be relocated in 2016, but due to some pollution problem in the new site, the relocation was postponed with the cheers of all the fishermen. In fact, the necessity of moving is explained officially in the following: 1) the old market structure is too old for trade in big scale; 2) more spaces are requested as the market keeps developing; 3) the area will be used as transport depot for Tokyo 2020 Olympic games.

As a matter of fact, relocating the Tsukiji market to Toyosu new site which is the land in Tokyo Bay Zone of Tokyo 2020 Olympic games venues plan, is under the process around 2014. Being part of the project to revitalizing Tokyo bay zone, the Tokyo metropolitan government would like to shift its popular fish market to a new land in order to bring people and new development opportunities for the Tokyo bay zone. Unfortunately, the merchants were not willing to move with the worries of lack of business and rising rent cost. After 4-year negotiation, in October of 2018, the whole market was relocated to the new Toyosu site. Also, the former site will be flat into the ground and launched construction project for Tokyo 2020 Olympic Transport Depot and the preliminary design bid was opened on 13th July 2018.⁹⁶ And the construction will be in a rush.

The relocation action has shown some evidence of being forced. And from the releasing information so far, the reported use of the former market site is the transportation depot serving for 2020 Tokyo Olympic Games. And after the 2020 Games, the proposal is given from Governor Koike is that the part of the “intra-market transaction” will be moving back to the former site and the Toyosu site will focus on mass transactions based on modern

96 Preliminary Design for Tsukiji Transportation Depot, TOCOG, Aug.13 2018

logistics.⁹⁷ It sounds ridiculous that the Tokyo metropolitan government decided to remove Tsukiji temporarily from the original site to leave space for 2020 Olympic games because of its closure to the planned Olympic villages and after Olympic Games, the government will make new Tsukiji market on the former site. However, if the Tokyo metropolitan government could not find a proper post-game project for transferring the transportation depot, the relocation of Tsukiji will surely become a black ink on the story of Tokyo 2020 Olympic sustainability.



Former Tsukiji Market



New Tsukiji Market (Toyosu Market)
Resource: Taken by Liao Qinling



Existing Old Tsukiji Outer Market
Resource: Taken by Liao Qinling

Conclusion:

Tokyo 2020 post-game sustainable strategies are mainly still in the phase of discussion and initial implementation. It is natural that to consider the post-game issue at this stage is a little bit early because there will be potential of changes in many aspects as the case of the Tsukiji market. However, learning from previous successful post-game development case, TOCOG has funded the Olympic Legacy Committee to deal with the post-game sustainability development issue in the early period of the game preparation phase. As a result, the post-game legacy issue can be discussed in parallel with the preparation work, which will lead to the coordinated decision-making and development for the projects in the Tokyo 2020 Olympic Games. From the basic study have been done, the 2020 Tokyo post-game sustainable strategies have been well inspired by 1964 Olympic experience and follow the IOC's sustainability guidelines. Keeping the sustainability in day-to-day operation at all the stages helps Tokyo able to

⁹⁷ 築地市場、豊洲移転後に「一部復活」案が浮上 2020 年のオリンピック後に、池上正樹, 加藤順子, Huffpost, Jun.19 2017.

Original Text:

この案を採用した場合、都の市場問題プロジェクトチーム (PT) の報告書に沿った構想になる可能性がある。豊洲に移転して 4 ~ 5 年後、水産仲卸を中心にした「市場内取引」の機能を築地に戻し、トラック運送による転配送やネット取引などの「市場外取引」は豊洲を拠点に行うというものだ。移転改修案の工期「3 年半」の想定期間は、「(オリンピックの) 駐車場を入れると」やや伸びることになる。

fix the problem occurs in short reaction time. In the end, the final target of post-game sustainability development is going to focus on social sustainability to provide solutions to present social problems.

4.2.3 Case Summary: Set a sample for future Olympic Games

By inheriting the experience of hosting 1964 games and being benefited from 1964's legacies, Tokyo can find reliable solutions and strategies to the problems and challenges during the preparation time of the 2020 Summer Games. However, the Tokyo case is somehow unique because of its separate distributed venue plan. As a matter of fact, the 1964 Olympic venue plan is a reflection of today's IOC's joint implementation of city/territory vision and Olympic vision. That one of the crucial points makes 1964 post-games development reach such good performance. In another word, Tokyo has perfectly integrated the benefits from Olympic holding into its urban development plan. So as today, Tokyo follows the same approach for creating a new example of urban development with the contribution from the Olympic Games.

However, a successful Olympic Games will not only lead to the improvement of the urban environment or economic improvement but also should contribute to the inner changes in society. It is mentioned that nowadays Japan has already formed a mature society. While in this mature society, Japan is facing new challenges as many other mature societies have. Such as aging population, lack of vitality, the weak economy and so on. By taking the chance of holding the 2020 Olympic Games, Tokyo would like to explore a breakthrough point of those problems. Nowadays, on one hand, by studying and adapting the previous successful experience, Tokyo maintains its original advantages in the aspect of economic and environmental sustainability, on the other hand, by emphasizing the social value of Olympic legacies and focusing on social sustainability in post-game development, Tokyo attempts to improve the mature society, regenerate the lifestyle and revive in 2020 and afterward.

Take a look backward to the Game Vision of 2020 Tokyo Summer Olympic Games: Sport has the power to change the world and our future. The Tokyo 1964 Games completely transformed Japan. The Tokyo 2020 Games, as the most innovative in history, will bring positive reform to the world by building on three core concepts: "Striving for your personal best (Achieving Personal Best)"; "Accepting one another (Unity in Diversity)"; "Passing on Legacy for the future (Connecting to Tomorrow)."⁹⁸ Without expectation, all the three pillars of vision are directing to the social topic of optimization, inclusion and continuity. Generally speaking, Tokyo has presented the excellent result of post-Olympic development of 1964 Games and the following step is to adaptively implement those successes into today's society and create the sample of future Olympic Games for mature societies.

⁹⁸ Tokyo 2020 Guidebook, TOCOG, Oct 2018, p.3

4.3 Beijing

Beijing, the capital of the People's Republic of China, hosted its first Summer Olympic in 2008. Thirteen years after Beijing's successful bid for summer games, Beijing won the bid for 2022 winter games in 2014. It is the first time in Olympic history that the same city will host both the winter and summer Olympics. Being benefited from the hosting of the 2008 Summer Olympic Games, the transport infrastructure was well improved in Beijing as the massive metro network and Beijing Capital International Airport carries millions of passengers every day at present. The 2022 Winter Olympic Games will enjoy those benefits as well. While, for Beijing, it is an opportunity to achieve the unfulfilled goals of the 2008 Olympic Games in 2022 Winter Olympics by using the saved investment for infrastructure and other aspects which is maturely formed in 2008 Games. It is also a good time to revise the performance of 2008 Olympic Games, if it is necessary, there will be some correction adapted throughout the hosting of 2022 Olympic Games. By analyzing the post-game sustainable performance of the 2008 Games and the sustainable strategies in preparation of both 2008 and 2022 Games, the advantages and weaknesses of Beijing's case can provide valuable experiences for the Olympic Games.

4.3.1 2008 Summer Olympic Games

Like many other first-host cities, it is natural to make use of Olympic holding to create and present a national image to the world, so does China. As noted by ex-premier Wen Jiabao, the Beijing 2008 Olympic Games presented an opportunity for China to show the world how "democratic, open, civilized, friendly and Harmonious" it is.⁹⁹ Beijing had to explore its way of presenting an excellent Olympic Games that satisfies IOC requirements and also realizing the national goals. However, in 2008, the Olympic sustainability issue was still at the preliminary phase, the awareness of sustainable development was not as strong as today. If we look back to Beijing's 2008 Olympic games from today, we can find many advantages and some problems as well.

2008 Beijing Olympic Park

After the announcement of a successful bid in 2001, Beijing and China officially went into the Olympic era. The design and construction of the Beijing Olympic park was the following step. Designed and planned by an American studio, SASAKI Associates and Chinese company HHDesign, Beijing Olympic park was decided to be developed in the area of northern Beijing along city's urban

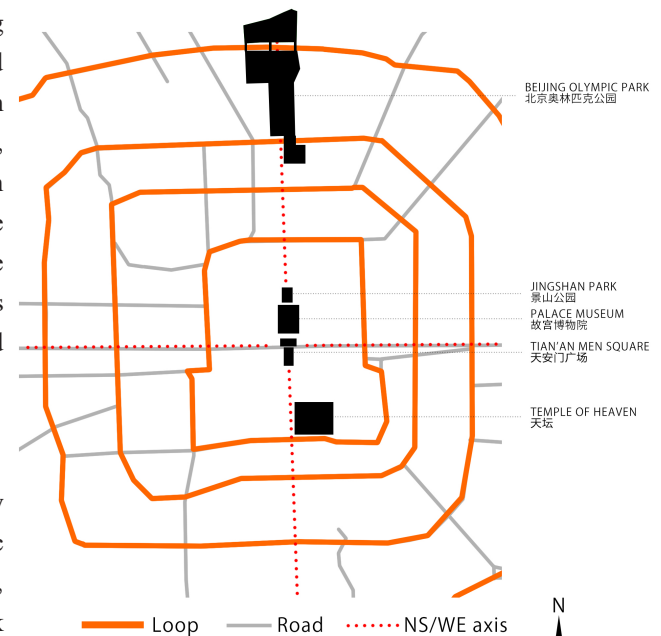


Figure.32 Beijing Olympic Park Urban Context

⁹⁹ The 2008 Olympics' impact on China, USCBC, China Business review, the magazine of us-china business council Jul.1 2008



Figure.33 Beijing Olympic Park Urban 2001 VS 2005
Resource: Google Earth Pro 7.3.2.5495 (64-bit), Produced by Author

N-S axis since Qing dynasty where the Palace Museum, Tian'anmen Square and many other famous places are located. Also, the site location has some specific meaning in Chinese ancient Fengshui theory, as folk saying that the North-South axis is considered as the Dragon Vein of Beijing and it will have some influence on the regional development, however, it is not scientific enough to be announced officially, but many Chinese people believe in it.

Unfortunately, for a long time, because the area was originally reserved for further science district plan in Beijing urban planning framework, Beijing did not carry out much projects and construction here. However, the scientific district project was not launched here. Eventually, this urban void has become a place where the floating population gathered and lived and several villages were built here spontaneously. As a consequence, 4,614 households in total 10,355 people were affected by land acquisition due to the need of construction of Beijing Olympic Park.¹⁰⁰ However, the Olympic parkland was a backward community in northern Beijing in 2001 due to lack of management and urban planning projects. It is popular in China that the municipal government would like to leave the specific surface of the land as a reserved area for future development which usually creates some urban void or backward spaces inside cities. If the time is long enough, some low-quality communities are easily formed spontaneously. Once there is a need for land acquisition, the residences have to move to other places with a certain amount of money as compensation. Some conflicts were unable to avoid during the negotiation with former residences. However, with good enough compensation, land acquisition did not take much time.

In 2008, the Beijing Olympic park was finalized and open to the Olympic games and the public. The park has two main parts: the Olympic Forest Park and Olympic Park. Most of the venues and supporting facilities are located in the Olympic park area while the forest park area is more dedicated to landscape and other outdoor events. In fact, the surface area of the whole Beijing Olympic Park is around 11.44 square kilometers which are almost three times big as the central park in New York. In fact, the 2008 Olympic



Figure.34 Olympic Forest Park and Olympic Park in 2008
Resource: Google Earth Pro 7.3.2.5495 (64-bit), Produced by Author

¹⁰⁰ 西方诋毁北京奥运的 10 大流言, CCTV, news.cctv.com

Original text:

2008 年 2 月 19 日, 北京市建设委员会副主任张家明在新闻发布会上再次声明, 北京奥运场馆建设共涉及居民 6037 户、14901 人。在这组数字中, 奥林匹克公园为 4614 户、10355 人, 约占搬迁规划的 80%。

Games has turned the former urban void space into an Olympic Park with a huge space of greenery in northern Beijing. Because of this Olympic park, the neighborhoods were also transferred from the former suburban area of Beijing into one of the planned CDBs in Beijing metropolitan.

During the preparation phase, the Beijing Organising Committee of the Olympic and Paralympic Games(BOCOG) realized that some venues of the Beijing Olympic Games were over-sized and over-budget. There were other problems such as the tight construction time, uncoordinated design depth and scope, non-uniformed review opinions and new requirements beyond the outline. As a result, BOCOG has established the 2008 Project Construction Headquarters Office(PCHO) which was responsible for coordinating different entities and problem shooting in order to speed up the construction process. Besides, under the leadership of Beijing Mayor Mr.Wang Qishan, the “Venue Slim Movement”[场馆瘦身运动]was launched.¹⁰¹ One of the cases was the roof removal of National Stadium. The initial design of National Stadium for Beijing 2008 Olympic Games has an openable roof, while during the Movement, the optimized design canceled this roof and simplified other unnecessary add-ons. With the launch of “Venue Slim Movement,” the BOCOG and PCHO were able to save budget in other aspects, such as infrastructure and environment improvement.

After the finish of the Beijing 2008 Games, BOCOG actively sought the transformation and development of the Beijing Olympic Park. In fact, for the 2008 Beijing Games, there was no specific organization or committee in charge of the post-game development issue and to be honest, the post-game planning was not rich and detail. A typical routine was adopted by the Beijing government and BOCOG, that is commercialization. As for the Nation Stadium, it was operated by National Stadium Company which was set up in 2003 in charge of construction work and then reorganized in 2009 for the post-game management and operation. “by the philosophy of “government guidance with enterprise operation and social participation”, the National Stadium Company makes full use of heritages of the Olympic venue, creating a new highlight of Bird's Nest tourism, introducing top events and performances, initiating youth charity events, developing independent brand projects, building a brand-new commercial industry chain and exploring diversified operation of venues. All such measures make Bird’s Nest a model of operating Olympic venues with sustainable development.”¹⁰² stated on the official website of National Stadium Company. As recorded officially, from 2009 until Jan 2019, around 150 events were held in National Stadium involving sports matches, music concerts, charity events and conferences.¹⁰³ However, the national stadium is commercialized successfully comparing to other cases, according to the report from Mr.Xiangjun,

101 A Study on The Whole Process Of Venues’ Planning And Design In 2008 Beijing Olympic Game, Chen Jingyuan, 2014

102 National Stadium-Bird Nest Website, <http://www.n-s.cn/>

103 Reference website: <http://www.n-s.cn/about.aspx?SID=349>

the general manager of National Stadium Company, on the 2017 Coliseum Large Stadium Summit, the National Stadium has received more than 30 million Chinese and foreign tourists, with an annual operating income of more than 200 million yuan, and has achieved profitability for many years since 2008.

2008

2018

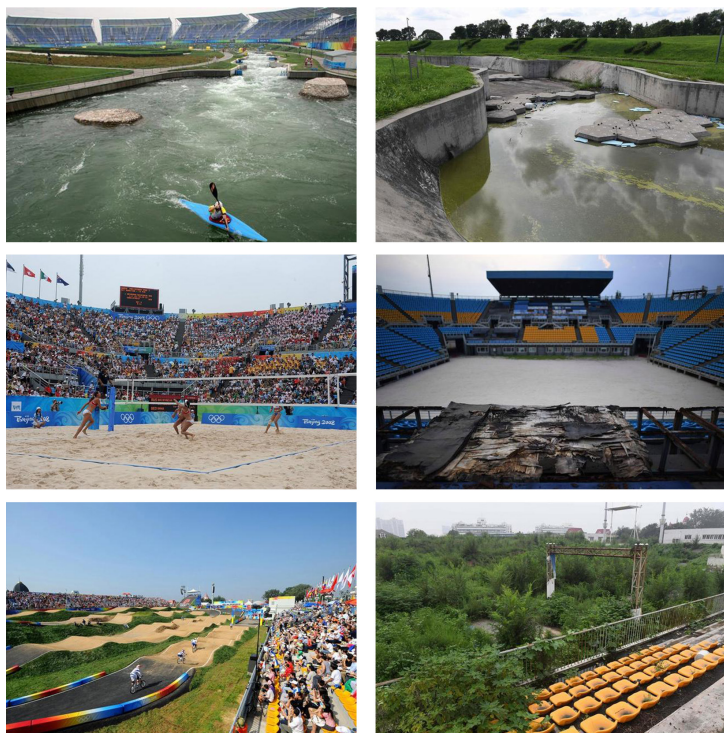


Figure.35 Comparison between 2008 and 2018, Kayaking Venue, Beach volleyball Venue and BMX Venue

Resource: Photos are Collected and Reproduced by Author

However, not all the venues are as famous as Bird Nest that can keep attracting tourists and businesses. Some venues were also abandoned after the Beijing 2008 Games. The kayaking venue, BMX venue and beach volleyball venue are examples. There three venues were specially constructed for hosting the Olympic Games as in Beijing even in China, the sports of kayaking, BMX and beach volleyball are not popular. “The interest of Chinese people in beach volleyball is too less.” An Xuguang, the manager of Chaoyang beach volleyball venue said, “even if the ‘International FIVB Beach Volleyball World Grand Slam’ Beijing Tournament, one of the top three events of the FIVB, was held, the attendance rate was very low. The people who come are mainly for free tickets, and there are very few tickets to buy.”¹⁰⁴ As a matter of fact, it is reasonable that the abandon happened for those venues. First of all, because of the first host and “vanity,” presenting an excellent Olympic Games was in high priority which led to the critic of “Olympic excluding cost.” Second, as the venues are located outside the central Olympic park, the post-game plan was missing. Last but not least, the sports are non-grassroot. Non-grassroot sports are hardly able to rise mass interest and attention without huge efforts on broadcast and promotion, as a consequence, the heavy cost of venue maintenance and operation after games certainly lead to abandoning in the end. It is a

pity of the Beijing 2008 Olympic Games that these venues were waste to be built and failure to be transferred, but it also alarms us the limited power and the potential risks of Olympic Games.

The ten years after the successful host of Beijing 2008 Olympic Games, the Beijing Olympic park has been much different from the original one. After several times of upgrades, nowadays, the former fencing venue is turned to be National Conference Center as planned in the preparation phase. The China Science and Technology Museum, National Centre of Chinese Traditional Culture and other museums and research institutes are also located

104 北京奥运会场馆现状调查：皮划艇赛道内看不到水，China Youth Daily，Aug.17 2012

around the Beijing Olympic Park. The Olympic Tower as a memory of the Beijing 2008 Olympic Games and a new attraction in the park was built up in 2016. Moreover, the Asian Infrastructure Investment Bank also placed its headquarter in the north-west corner of the park. It is foreseeable that the Olympic Park will become one of the CBDs in Beijing soon in the future and the Olympic forest park will become a central park like the one in Manhattan.

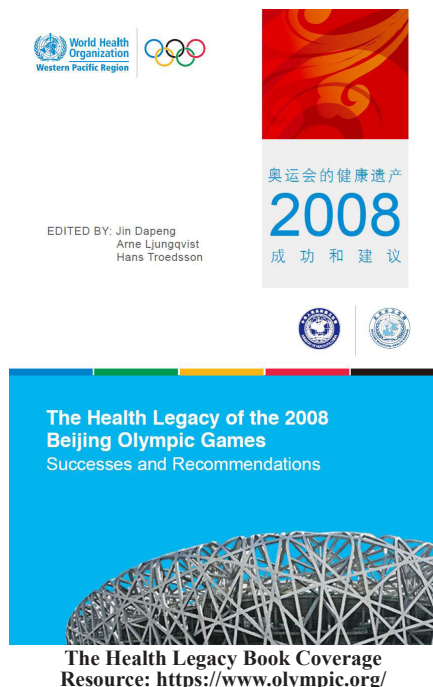


Beijing Olympic Park

The intangible legacy from Beijing 2008 Olympic Games

In 2010, at a ceremony in the Beijing, “The Health Legacy of the 2008 Beijing Olympic Games: Successes and Recommendations” a summary book of 2008 Beijing Olympic Games most influential legacy, health legacy, was released by WHO, the International Olympic Committee (IOC), the Chinese Ministry of Health, BODA and the Beijing municipal authorities.¹⁰⁵ It is the first official recognition that the health legacy has been defined as the sustainable, positive legacy for the host city of the Olympic Games. In the book, it summarizes in a comprehensive way of 2008 Beijing Olympic Games’ influences in the aspects of health issue including a large range of topic such as medical capacity, health security, food safety, air quality, tobacco control and so on. As written in the book, “The health legacy is multifaceted, with many potential long-term impacts. These fall broadly into the following categories: improved capacity in traditional medical services required for hosting the Olympics; a strengthened public health system, including disease surveillance, risk management and health emergency response; an enhanced living environment for the host city citizens; and increased health awareness among athletes, visitors, and host country residents through successful health education and campaigns prior to and during the Olympic

¹⁰⁵ WHO, BODA launch book on health legacy of Beijing Olympics, WHO, May.18 2010



Games.”¹⁰⁶ That is to say, contributed by the Beijing 2008 Olympic Games, China has explored a relatively mature system responsible for public health issues and health risk management. Also, the publishing of the book provides “an instructive example of how mass events can be organized to promote health in a value-added way”¹⁰⁷ that can be interpreted by other countries.

Another evidences that reflects the nationwide health legacy influence of is the National Fitness Program. As a matter of fact, dating back to 1995, the central government of China released “National Fitness Program Outline 1995-2010” and “People's Republic of China Sports Law” in order to advocate that the whole people should participate in more than one physical fitness activity every day, learn two or more fitness methods. One year after the Beijing 2008 Olympic Games, in 2009, the State Council of China approved the proposal to set up National Fitness Day as an enhancement of previous “1995-2010 Outline”, since then, every 8th of August is set to be the National Fitness Day in China. The original intention of National Fitness Day is to memorize and celebrate of success of Beijing 2008 Olympic Games, and more important, to promote healthy lifestyle across the nation and improve the mass physical fitness. Like the 5-year Development Plan for comprehensive national development, in the aspects of sports and health, after the Beijing 2008 Olympic games, combining the previous outline and program experience, the Chinese government starts to release the 5-year plan of National Fitness Program since 2011.

The first National Fitness Five-Year Program was released in 2011. In the “National Fitness Program 2011-2015”, the general goals are: 1) increase the participation in sports; 2) significantly improve the physical and mental quality of both urban and rural residents; 3) increase the development of sports facilities; 4) concrete the national fitness organization network throughout villages and cities; 5) Further develop the social sports coaching team.¹⁰⁸ By 2015, the awareness of participating physical fitness should be further enhanced, the number of people participating in physical exercise will increase significantly, the physical body quality should be improved significantly, and the sports facilities should be improved to form a national fitness service system covering both urban and rural areas.

106 The Health Legacy of the 2008 Beijing Olympic Games: Successes and Recommendations, J.Dapeng, A.Ljungqvist, H.Troedsson, 2010, p.6

107 WHO, BODA launch book on health legacy of Beijing Olympics, WHO, May.18 2010

108 Extracted and concluded based on National Fitness Program 2011-2015



The second “National Fitness Five-Year Program 2016-2020” was released in 2014 as a further consolidation and upgrades of previous Five-Year Program. Also, the National Fitness Program has risen to a national strategy and has an important impact on the development of public health issue. In the "Program 2016-2020", it clearly states that by 2020, the public's awareness and participating in physical fitness will generally increase. The number of people who often participate in physical exercise once or more per week will reach 700 million, and the number of people who regularly participate in physical exercise reaches 435 million. The education, economy and society functions of the national fitness program will be sufficiently exerted, and the situation of mutual promotion and development with various social undertakings has formed. The total scale of sports consumption will reach 1.5 trillion Chinese Yuan (~22 billion Euro). The National Fitness Program will become the promotion of the development of the sports industry, stimulating domestic demand and forming new ones.¹⁰⁹ By the year 2016, China's Sports industry scale has reached 1.9 trillion. The number of sports venues across the country has reached 1.88 million and it will reach 2.5 million according to some prediction.

Another important planning outline, “‘Healthy China 2030’ Planning Outline” was also released by The Central Government and The State Council. It summarized achievements gained in the past time and pointed out new challenges with industrialization, urbanization, the aging population, environmental problems and changing lifestyle in the society. It also declared new targets for future national health development in two main directions: 1)the improvement of medical service and health industry; and 2)the promotion of sports and healthy lifestyle.

After the successful celebration of the 2008 Beijing Olympic Games, the Chinese government has been sparing no effort to promote the Olympic legacy of sports and healthy living in China. Various policies and regulations have been introduced to support the development of local sports at the national level and strive to improve the physical fitness of people. Nowadays, although the Chinese government has gained some achievements, it is still far from enough, but under the guarantee of the continuity of policies and financial support from the central

109 体育总局介绍《全民健身计划（2016-2020年）》情况 称将全民健身打造为“国家名片”，<http://www.gov.cn Jun.23 2016>

NATIONAL FITNESS PROGRAM 2016-2022

-  Increase awareness and participating of physical fitness
-  The Number of People who do fitness exercise regularly reaches to 435 million
-  The Number of People who do physical exercise once or more than once a week reaches to 700 million
-  The total sports market consumption will reach ¥1.5trillion(€22billion)
-  Stimulate domestic demand and forming new driving point for development
-  Exert the education, economy and society functions of National Fitness Program

Figure.36 Goals of National Fitness Program 2016-2022

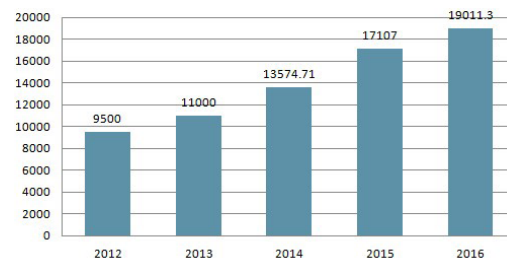


Figure.37 2012-2016 China Sports Industry Scale Chart
Unit: 100million Chinese Yuan(亿元)

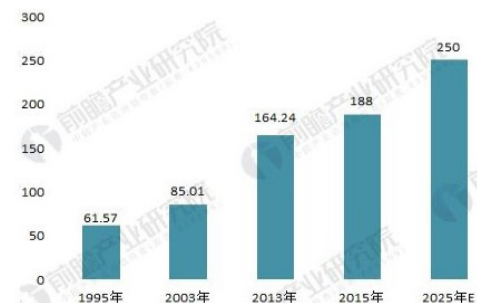


Figure.38 1995-2025 Record and Prediction Number of Sports Venues in China Unit: 10 thousand (万个)
Resource: <https://www.qianzhan.com/&http://www.sport.gov.cn/>

government, we have reason to believe that China's Sports & Health industry will have a longer-term development in the future.

Conclusion

As for China, Beijing 2008 Olympic Games has left a beautiful Olympic park and iconic venues as a tangible legacy to Beijing and China. While, to be honest, the most valuable part of Beijing 2008 Olympic Games is the intangible legacy left for the 1.4billion people¹¹⁰ in China. The intangible legacy from 2008 Games is not only the upgrade of China national image on the world stage but more significant, is the increasing attention on health and living quality and the rising awareness of daily sports participation. As Chinese people, we can feel the shifting of national development focus from industrial-economic orientation to the simultaneous development of material and spiritual civilization.

4.3.2 2020 Winter Olympic Games

Comparing to the success of health promotion in the Beijing 2008 Olympic games, the tangible legacies in Beijing are a little bit weak. Only some venues in Olympic Park and university campuses are used in a good way nowadays. Besides the abandoned venues, the outdoor planning of Olympic park has some problems of oversize at this moment. In 2015, Beijing won the bid for the 2022 Winter Olympic Games which will bring not only the new challenges but also an opportunity to improve the weaknesses of Beijing 2008 post-game performance.

Planning towards a better post-game sustainability

After the successful host Beijing 2008 Olympic games, the Chinese government has realized the importance and the influence power of the post-game plan. As the country is continuously benefited from the 2008 Olympic legacy of health and sports promotion, the central government would like to keep those benefits for a rather long time. Hosting of the 2022 Winter Olympic Games will somehow maintain the enthusiasm of sports among people, contribute to the further development of the National Fitness Program and more important, bring new legacies to the country.

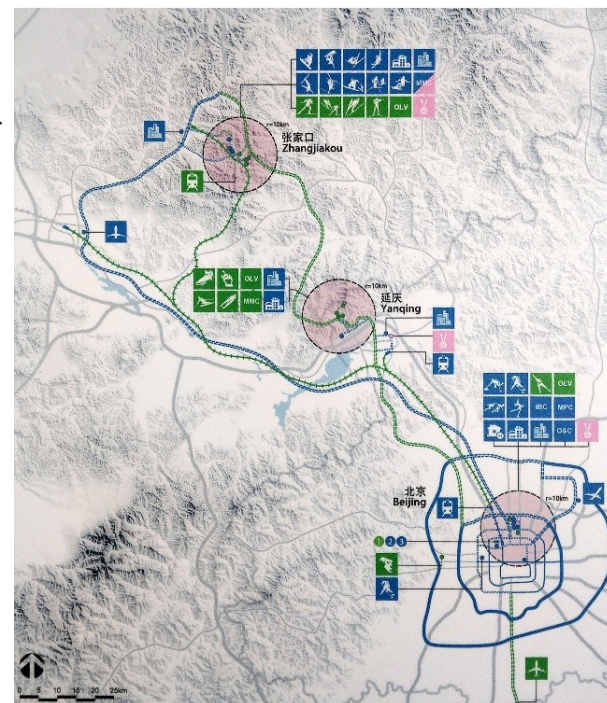
In fact, the 2022 Games are the joint host of city Beijing and city Zhangjiakou, the venues are planned in Beijing, Zhangjiakou and the city Yanqing which locates along the corridor between Beijing and Zhangjiakou. Apart from the geographic reason, another important reason to choose Zhangjiakou as a co-host city is mainly because of its history of winter sports, especially ski competition development in the last two decades. Through 20-year development, nowadays, Zhangjiakou has developed into the leading area of China's winter sports industry and

¹¹⁰ Database 2017, National Bureau of Statistics of People's Republic of China

it is commonly agreed as the training base for athletes and skiers in China and other Asian countries as well as a holiday destination for ski lovers.¹¹¹ Inserting the ski and other mountain snow competition into the right area is the right choice for maximum optimized performance in sustainability. It certainly reduces the financial and time investment of new venue construction, enhances the local native industry & market and brings new development opportunity. As reported by Chinese social media Sohu.com, after the announcement of Zhangjiakou's host of 2022 Winter Games, many people went to Zhangjiakou to experience the fun of winter sports on the upcoming Olympic tracks in advance.

There is a total of 12 venues (competition venues and other venues in total) located in Beijing, among these venues, 11 are going to use the existing Beijing 2008 legacies. The only one new venue is the National Speed Skating Oval which occupies the former site of temporary venues for hockey and archery in 2008 at the west site of Beijing Olympic Forest Park. Among the total of 12 competition venues, 5 in Beijing, 5 in Zhangjiakou and 2 in Yanqing. As mentioned in Beijing 2022 Candidature file “the vision for Beijing 2022 is fully aligned with the plan of the Chinese National Government to build the Beijing- Zhangjiakou Sport, Culture and Tourism Belt and supported by the National Strategy.”¹¹² the primary goal is to exert the radiant effect of central city Beijing and take advantage of Winter Olympics host to drive the coordinated development of surrounding cities.

It was also declared in the Candidature File that the Chinese National Government issues the Master Plan of the Integrated and Coordinated Development of Beijing, Tianjin and Hebei, in which the establishment of the Beijing-Zhangjiakou Sport, Culture and Tourism Belt with the abundant sports venues and facilities, historic sites and cultural resources brought by hosting the 2020 Winter Olympic Games in Beijing and Zhangjiakou is one of the most important parts. In the end, it will provide a reliable guarantee for the accomplishment of the vision of and the plan for Beijing 2022 Olympic Games and set a good example of regional coordinated development and its alignment with Olympic Games.¹¹³ As they hope, after the winter Olympic games, a mature “snow travel route” along the



Beijing 2020 Venue Plan

111 可持续的冬奥——北京申办2022年冬奥会场馆规划设计方案问答录, Guilin, 2014

Original Text: 北京2022年冬奥会的部分雪上项目安排在张家口崇礼县。崇礼县已有20年滑雪产业发展的历史,是目前中国滑雪产业的龙头地区,也是中国乃至亚洲其他国家运动员的训练基地和滑雪爱好者的休闲度假目的地。

112 Beijing-Zhangjiakou 2022 Candidature file, Vision, Legacy and Engagement, p.17

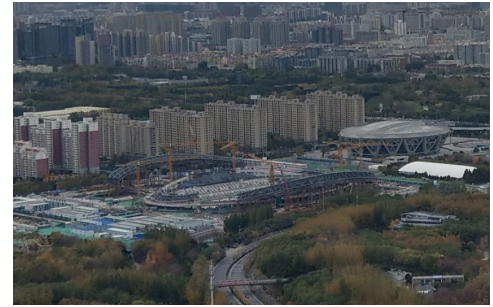
113 Beijing-Zhangjiakou 2022 Candidature file, Vision, Legacy and Engagement, p.17



Winter Olympic Village, Beijing, Yanqing and Zhangjiakou, proposal projects

Resource: 可持续的冬奥会——北京申办2022年冬奥会场馆规划设计方案问答录, Guilin, 2014

corridor of Beijing and Zhangjiakou will be developed as a part of the post-game plan and one of the Olympic legacy from 2020 which will bring more incomings and new development drivers to the locals. Probably, it is foreseeable that in a not far future, Zhangjiakou will become Beijing's "Bardonecchia."



National Speed Skating Oval under Construction

Prepare for the post-Olympic sustainability since now

In 2012, London firstly presented an almost full-phase sustainable Olympic Games to the world, which has officially pushed the Olympic Movement into Olympic Sustainability Time. For Beijing, while learning from the experience of London and Beijing 2008 Olympic Games, at this moment, Beijing Organising Committee for 2022 Winter Olympic Games and Paralympic Games(BOCOG) has realized the importance of planning post-Olympic sustainability in advance, especially referring to the parallel work to the preparation work. After summarizing the advantages and disadvantages of the sustainable development of the past Olympic Games, the post-Olympic sustainable development strategies of the Beijing 2022 Winter Olympic Games are becoming more and more clear.

To fully undertake the intangible legacy of the 2008 Beijing Olympic Games, also to promote the 2022 Winter Olympics, during the preparation phase now, all over China, especially in the northern area, more and more activities and events for teaching easy-to-learn winter sports to the people are organized frequently and actively. Combining with the annual celebration of National Fitness Day and fully implementing National Fitness Program are good ways to promote the winter sports and further consolidate the sports culture among the mass which will rise the mass interests in Winter Olympic Games and winter sports. By taking those actions, the Chinese government would like to enlarge the influence of winter sports among Chinese people and cultivate the mass base of winter sports before the Games as a hope of keeping

enough interests and attentions on winter sports in the post-Olympic time of 2022 Beijing Winter Olympic Games. Finally, reach the goal that was written in the Candidature File: the rapid growth of winter sports in participation, marketing and industry across China.¹¹⁴

On November 1st of 2018, Beijing 2022 Legacy Coordination Committee (BLCC) was formed at the opening ceremony of Beijing Shougang Industrial Park 2022 Headquarters. BLCC is an official committee funded in China like Olympic Park Legacy Company (OPLC) funded in 2010 for London 2012 legacy development. BLCC in Beijing 2022 will be responsible for delivering each legacy project before, during and after the Games and will serve as the decision-making body for those legacy projects, reviewing internal and external efforts related to Beijing 2022.¹¹⁵ Personally thinking, it is necessary and efficient work to establish such kind of management committee with a specific and detail focus on post-Olympic legacy and sustainable development issue. By generating and collaborating with various stakeholders in all phases of the Olympic Games, it will deliver the detail and feasible post-Olympic projects and control all the problems that may occur in short reaction time. BOCOG set up this committee three years before the opening, at the time that after the fix of general venue plan, venue design and many other decisions at the macro level. To some extends, at least in Beijing case, it is the correct that the committee will not only have a clear direction and goal to process the following work at a deeper level but also avoid the possibly of potential large-scale changes which can usually result to the waste of time. BOCOG somehow strictly limits the work level and scope of BLCC which is important especially at the preparation phases. Once the games are finished, BLCC will turn to be the main role on the stage.

Conclusion

Beijing 2022 Winter Olympic Games is now in the midst of intense preparations, so far the complete post-Olympic plan of Beijing 2022 Winter Olympic games has not been published when this thesis is under writing. However, until now, Beijing 2022 Olympic Committee has implemented well the IOC suggestions and recommendations for Olympic sustainability at this moment. The joint vision between Beijing-Zhangjiakou regional development and the Olympic Games has somehow ensured that the 2022 Olympic games will leave value tangible legacies for these areas. In the aspect of intangible legacy, Beijing will undoubtedly further consolidate the Olympic health legacy and develop new legacy related to sports and lifestyles in winter.

114 Beijing-Zhangjiakou 2022 Candidature file, Vision, Legacy and Engagement, p.21

115 Beijing 2022 Announces Legacy Decision-Making Committee, IOC, Nov.6 2018

4.3.3 Case Summary

For the city of Beijing, the 2008 Summer Olympic Games brought enormous opportunities and valuable experience for urban and social development. Though it is re-estimated today as not perfect as considered before, it still left an iconic area for the future urban expansion and more importantly left the health legacy for whole China. Luckily, in a short gap, Beijing won the bid of the 2022 Winter Olympic Games which somehow can be treated as a sequel of Beijing 2008 Olympic Games. 2022 Winter Olympic Games will continue to write the stories of the 2008 Beijing legacies. It will also set an example of the transformation from summer Olympic legacy to winter Olympic legacy. For the whole world, Beijing will present the first sample that how the sustainable strategies will make an influence on different season games and what kind of post-games sustainable development will happen with benefits both from summer and winter games.

As a matter of fact, Beijing has made its preparation work of 2022 winter Olympic games visionary enough to contribute to the post-game sustainable development plan as much as possible. Nevertheless, it is still early to make comments on 2022 post-game development issue. There are still some threats to the post-Olympic development of 2022 Olympic Games. The oversized Olympic park in Beijing will be the first threat, and it might be difficult to find a proper function to fulfill the large space of the main north-south axial corridor which turns to be a perfect wind tunnel in winter. To be honest, it still needs some time to enrich content and function in the oversized Beijing Olympic Park. The second threat is that the winter sports in China are lack of mass base. Generally speaking, the north-east regions of China have a tradition of winter sports, while the total population in northeast China was around 129 million(2015)□around 10 percent of the total population in China. Due to the climate reason, the majority of the population are living in the area without much snow, and as a consequence, people rarely touch winter sports. Though some reports showing the increasing participating in winter sports and the increasing revenue of the winter sports market, many of this participation and consumption are one-off. Comparing to the summer sports, winter sports have many restrictions and relatively high participation threshold. Indeed, there are some difficulties in winter sports as well. This is also one of the reasons for the lack of a mass base. If the sports are non-grassroot, it is necessary to have some control during Olympic preparation. The host city should decide if try best to make those sports popular enough among the people or minimize the cost on those sports in the Olympic Games.

Last but not least, it is a typical and severe problem in China that may threaten the post-game development especially in small cities and backward areas, the real estate market. The preparation work of the 2022 Winter Games in Zhangjiakou has made the local housing price increase triple times since 2015. The dramatic house price

increase attracted many wealthy real estate investors from other places and also led to the local market inflation. The local consumption level is also increasing highly, but with enough attention, good policies and investment at this point, it can support such rapid development model at this moment. However, once the Olympic Games are over, if the interests and policies are not able to keep. The Olympic economic bubble will collapse soon and damage the local society in deep.

To sum up, for achieving real good performances of post-game sustainability development, Beijing should make more efforts to present social problems and make use of Olympic as an opportunity to drive the social reformation. That is the correct way of how post-Olympic sustainable strategy can make long-term benefits. To be honest, for realizing good sustainable performances after games, Beijing needs more time, courage and determination.

Chapter 5

Thesis Conclusion

In the last chapter of this thesis, there will be a summary of London, Tokyo and Beijing case studies. And extract three models of post-Olympic sustainable development based on each city's experience. Besides, there will be a list of post-Olympic sustainable development recommendations in the aspects of society, architecture and urban. In the end, the thesis conclusion and discussion will be presented.

5.1 London, Tokyo and Beijing, Model for future Olympic Games

Learning from the previous experience is quite important in the research of post-Olympic development, by throughout the case study analysis of London, Tokyo and Beijing Olympic experience. Figure 39 briefly shows each city's Olympic story, their post-game sustainable development works and comments from the author.

As a matter of fact, these three cities are representative. They represent three different types of Olympic city in the world. For London, it represents the city in the developed western countries which usually has the solid economic foundation and political foundation, but, are also facing with the problems of low economic growth, unemployment rate growth, refugee issue and terrorism. Hosting the Olympic Games usually can be treated as a heavy burden and have no help to the social problems by the national, and comparing to those social problems, only a few people show interests in Olympic Games. While, London has provided its solution that is by hosting the Olympic Games, gain the resource and determination for an urban backward area regeneration and improve the local life quality. Making use of the Olympic Games as a catalyzer for improving poor living condition with a reasonable and affordable budget is welcomed. It is not necessary to be a nationwide project, and it is even better to focus only on a specific area and specific group of people and develop targeted strategies to improve those people who are easiest to improve. Indeed, it will bring different scenes and recognizable changes to society. In post-Olympic time, London is transferring the Olympic Legacy into five new communities with vitality and innovation. For the cities have the similar background like London, bidding an Olympic Game that helps the regeneration of local area as its goal may gain more support from the national.

For Tokyo, it represents the mature society which has a nearly perfect social mechanism and welfare system but usually faces the problem of aging population, low birth rate, labor shortage and so on. The whole society is under the atmosphere of depression. Hosting the Olympic Games is like injecting provocation into society. It will not only bring the new driver of development but also should make more influence on the future generation. Since the physical environment has been well constructed, the post-Olympic sustainability work will have more focus on social sustainability that is keeping enthusiasm for Olympics and sports in society, activating young generation's confidence to the society and providing more opportunities for next generations. As a result, create fresh vitality in

society. For a similar society which needs a start point of revitalization or reemergence, Tokyo's solution is worth to learn from. One thing is careful is that Tokyo has a great tangible and intangible legacy from previous Olympic host that many cities do not have, but it would be similar if the city has a large amount of sports facilities and venues in daily use.

For Beijing, it is the most representative city for the future. Since more and more developed countries show fewer interests in hosting, it is the time for the Olympic Games to go to developing countries. For the first-host country, undoubtedly, presenting a great national image to the world is one of the most important goals of hosting. However, the cost should be limit and Beijing 2008 Olympic Games is a negative example, in this case, too much investment was wasted on some venues. Nevertheless, the Beijing Olympic Games left health legacy which is keeping benefitting the whole country for ten more years and driving the development of the entire national sports market. To be honest, Beijing is lucky to be chosen to host the 2022 Winter Games as an opportunity to revise and fix its failure in the Beijing 2008 Games. Fortunately, Beijing has released a comprehensive, coordinated regional plan for post-2022 Olympic time and is now under its way of minimizing the side effect from Beijing 2008 Games as well. For the following new host city, it must learn from Beijing's lesson. Especially for those first host country who does not have such a huge population base as China, it is more secure to invest in more practical aspects. Making more investment in infrastructure and social improvement rather than having several iconic venues will have much more long-term benefits to society. In history, developed countries have gone many detours in development due to the lack of coordination and comprehensive management. Nowadays, for having rapid and sustainable development, it is crucial for developing countries to follow the concept of coordinated and comprehensive development constantly.

For the post-Olympic sustainable development issue, London's case is an example of Olympic Shrinkage for the regeneration of the urban area and urban life which is more dedicated to the physical transformation. Tokyo's case is an example of Olympic Lasting Stimulus for revitalizing the current social life which is more concerned about the social value of the Olympic movement. Moreover, Beijing's case is an example of Olympic Integrating for new development opportunity with the comprehensive and sustainable solution which tries to achieve the balance between "vanity" and sustainable development.

	London 2012		Tokyo 1964	Tokyo 2020
General Information	Year of Bid Win	2005	1959	2013
	Year of Case	2012	1964	2020
	Games Full Name	Games of the XXX Olympia	Games of the XVII Olympia	Games of the XXXII Olympia
	Games Season	Summer	Summer	Summer
	Games Vision	Delivering the experience of a lifetime for athletes Leaving a legacy for sport in Britain Benefiting the community through regeneration Supporting the IOC and the Olympic Movement.	-	Sport has been a part of Tokyo 1964 Tokyo 1964 was the first Olympic Games to be held in the 21st century 2020 Games were the first Olympic Games to be held in the 21st century reform to the Olympic Games Striving for a better world Accepting the challenge of the 21st century Passing on the Olympic flame
	Olympic Motto	Inspire a Generation	-	Discover
	Main Host Zone	London Olympic Park	National Stadium Zone Yoyogi National Gymnasium Komazawa Olympic Park	Heritage Zone Tokyo Bay (Venue plan)
Post-Olympic Development	Post-Olympic Target	Community Regeneration in Lower Lee Valley, East London	-	Revitalisation of the area
	Target Set Time	2005	-	2013
	Management Group	Olympic Park Legacy Company (Before 2012) London Legacy Development Corporation (Since 2012) London Organizing Committee of The Olympic & Paralympic Games London Metropolitan Government	Tokyo Organizing Committee of The Olympic & Paralympic Games Tokyo Metropolitan Government	Tokyo Organizing Committee of The Olympic & Paralympic Games Tokyo Metropolitan Government
	Main Legacy Project	National Stadium Reformation: Home to West Ham United Team Former Broadcast and Press Center Reformation: Here East Innovation Hub Olympic Park Reformation: Five New Communities	Yoyogi National Gymnasium Komazawa Olympic Park Nippon Budokan Hall Shuto Expressway Shinkansen Bullet Train	“Yoi, Don’t Stop”
	Post-Olympic Time Keyword	#Shrink #Regeneration #Community	#Infrastructure #Continuity #Open	#Revitalisation
	Evaluation and Discussion	Social Sustainability	★★★★☆	★★★★★
Venue Design and Planning		★★★★★	★★★★★	★★★★☆
Level of Integration		★★★★★	★★★★★	★★★★★
Problem & Risk		Brexit could lead to discontinuity of policy and support and cause worries in society.	Old structures and frequent use require high maintenance cost and large amount of reinforce work to be resistant to the earthquakes.	The Aging of the population is a challenge for the social progress of the host country.
Comment		Six years of London Olympic Games, some of the legacy projects have been realized and open to the public. At present, London has shown successful legacy development and management after games. Honestly, London Olympic Games can be set as the milestone in the history of Olympic sustainability development for this first comprehensive plan and implementation of Olympic sustainable development.	In fact, during the period of Tokyo 1964 Olympic Games, there was no concern about sustainability. Tokyo has distributed its Olympic facilities separately and intentionally integrated its city development plan with Olympic Games host very well which leads to the continuous and frequent use and fully exerts the value of 1964 legacies. As a result, Tokyo is able to be keeping benefited from 1964 legacies even today. That’s why the social sustainability, venue design and planning and level of integration are given five stars.	Tokyo 2020 Olympic Games benefited from the legacy of the post-Olympic Games. Tokyo would like to keep the same level of sustainability. However, the 2020 Olympic Games performance is not as good as the 1964 Olympic Games. The stars are the same.

08

2020	Beijing 2008	Beijing 2022
	2001	2015
	2008	2022
the XXXII Olympia	Games of the XXIX Olympia	Games of the XXIX Olympia
	Summer	Winter
the power to change the world and our future. The 1964 Games completely transformed Japan. The Tokyo Games, as the most innovative in history, will bring positive changes to the world by building on three core concepts: - For your personal best (Achieving Personal Best) Bringing one another (Unity in Diversity) Leaving a Legacy for the future (Connecting to Tomorrow)		Spread and practise Olympism and Olympic Values Ignite the passion for all-round development of winter sports in China Become a new model that drives the sustainable development of the region
Tomorrow	One World, One Dream	Joyful Rendezvous Upon Pure Ice and Snow
Zone		Beijing Olympic Park
Bay Zone (Beijing follows the concept of 1964 Games, a separate plan)	Beijing Olympic Park	Zhangjiakou Yanqing
Revitalization of a new heart of Tokyo	Key social and environmental	Promote sports, fitness and health lifestyle
	2009	2015
Organizing Committee of The Olympic & Paralympic Games	Beijing Organizing Committee of The Olympic & Paralympic Games	Beijing Organizing Committee of The Olympic & Paralympic Games
Metropolitan Government	National Bureau of Sports	National Bureau of Sports
Legacy Commission	The State Council of PRC	The State Council of PRC Beijing 2022 Legacy Coordination Committee
“用心、懂中国”[用心、懂中国]	National Fitness Program[全民健身计划]	National Fitness Program[全民健身计划] Regional Coordinated Development of Beijing-Zhangjiakou
Education #Education #Social Legacy	#Health #Fitness	#Health #Fitness #Regional Coordinated Development
	★★★★★	★★★★☆
	★★★☆☆	★★★★☆
	★★★★☆	★★★★☆
	★★★★☆	★★★★☆
Large Population and Low Desire Society are the biggest challenges for Japan. Whether the 2020 Olympic can mitigate the problem or not? And for Tokyo Bay Zone, can Olympic Games activate it?	The oversized Olympic park has become the area difficult to enrich and fulfill after the Games. Some non-grassroot sports venues were abandoned.	Winter Sports are lack of mass base in China. Whether it can keep enough attention after game will be the problem.
2020 Olympic Games are under preparation. Being inspired by 1964 Games, Tokyo can spare more attention on its Olympic development plan. For the 2020 Games, Tokyo aims to leave valuable legacies for the young generation and social sustainability as good as the game in 1964. Even if Tokyo can well implement the success of 1964 into the future, there will be no worry about its post-Olympic development. So far, for the three star-rate categories, 3.5 to 4 stars is the evaluation to the present work.	Beijing 2008 Olympic Games has a significant meaning to the country of China. Thus, China tried its best to present a wonderful game at no cost which led to the pursuit of modern building shape and large volume. As a consequence, Beijing created an oversized Olympic park and spent too much for satisfying the country’s vanity, to be honest, Beijing 2008 Games were not much concerned about post-game sustainable development of venues and facilities. However, Beijing 2008 games has made great achievement in social sustainability. The launch and continuous implementation of National Fitness Program has brought many benefits to this country in economy and society.	Beijing 2022 Olympic Games has learned the lessons of the 2008 Olympic Games, and draw on the successful experience of other Olympic Games. The regional coordinated development of Beijing-Zhangjiakou is the “sale” point of post-Olympic sustainable development. It will bring the benefits from capital city Beijing as well as winter Olympic Games to the local societies among the region. Moreover, Beijing 2022 Winter Games will keep promoting the National Fitness Program across China and advocate the health lifestyle. Comparing to Beijing 2008, Beijing 2022 Winter Games has paid much more attention to the post-Olympic development. Rating all categories with 4.5 stars is an optimistic outlook for its
Case Study Summary		

5.2 Recommendations for Post-Olympic Sustainable Development

There are nine recommendations for post-Olympic sustainable development in total to the host city extracted from this thesis in the aspects of society, architecture and urban.

Recommendation 1:

Establish the coordination group for post-Olympic development

It is compulsory to establish a coordination group to manage post-Olympic development in every stage. The coordination group can be in the following forms. 1) Department of Olympic Organizing Committee; 2)Individual Committee; 3)Individual Company; 4)NOGs; 5)Government Department. No matter what the form is, the group will be in charge of the work of decision and plan delivery, communication among different stakeholders, project supervision and quality control. Moreover, the time of establishment should be as early as possible in order to have close and parallel work with the whole Olympic Games development process. In the post-Olympic phase, this group should be in leadership.

Recommendation 2:

Evaluate the legacy value for each single sport

In the preparation phase, it is recommended to every single city to evaluate the legacy value for every single sport under specific social condition. A simple evaluation method can be applied. With a list of criteria, rate each category with the same unit and draw the bars proportionally. Then sum up negative and positive bars separately and then make a comparison between tow bars. The result will be evident. So far, the suggested criteria include the following categories: 1) National achievement; 2) Participating cost; 3) Participating difficulty; 4) Facility construction cost; 5) Environment impact; 6) Grassroot level. Making this sports legacy value evaluation can help to figure out further work direction and focus. If the sport has less legacy value in the host place, the investment should be limited. However, the rating process should be supported by statistics and opinions from experts. And the result will strongly relate to the area scope that set first. Figure.41 is an example of the evaluation process of skating in China.

Recommendation 3:

Venue design in flexible way

After processing the sports legacy value evaluation, the venue design can have some important references from the social aspect. It is reasonable and acceptable for the host city to propose one or two iconic venue designs as

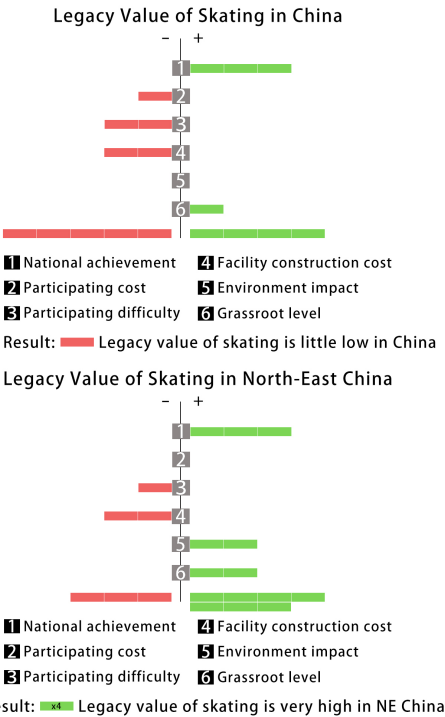


Figure.40 Example of Sport Legacy Value Evaluation

landmark and memory carrier of the Olympic host. For the majority of venues, the design should be flexible, practical and economic, such as the use of temporary venue, reuse of existing venue with low renovation cost, venue design with simple form and structure which can be easily transferred into other functions after, integrating different venues to reduce the indoor service surface and leave more outdoor open space. Venue designed with high flexibility will reduce its impact on the environment and offer more possibilities for young designers in further.

Recommendation 4:

Expand diversity of small-middle size venue long-term use

Expanding diversity of small-middle venue long-term use is another flexibility of venue. It refers to a more wide range of functions in venues after the Olympic Games. So far, many venues are still used as sports facilities mainly after the Olympic Games. With a flexible design, there is the possibility that after some refurbishing work, the venue can adapt to new functions that are more grassroots to the neighborhoods rather than sports after the Olympic Games. Hotel, shopping mall, nursery, supermarket and some daily functions can be attempted for long-term stable use.

Recommendation 5:

Minimize the negative impact of venue plan

The venue plan should align with the urban development vision. The good venue plan will not only meet the demands from the Olympic Games and athletes but also should lead to the improvement of existing transportation infrastructure and backward districts. Land expropriation and massive large-scale construction should be reduced as much as possible. The theme of the venue plan should explain the concept and strategy behind the design. When using the existing venue, reduce the time for renovation and return with affordable cost for the public. Minimize the cost of non-grassroot sports venue or give a grassroots function after games. Last but not least, do not work for vanity.

Recommendation 6:

Make full use of public transportation

Except for some particular and important occasions, the use of specialized vehicles should be limited as much as possible. Most of the host cities will make good public connections from the city center to the Venue sites in order to offer good accessibility for the audience, while for athletes, coaches and officers, it would be better for them to take the public transportation for going to venues, villages and where else they want. Do as roman does and

share their Olympic time with locals will leave all people an unforgettable Olympic memory. Try not to split the Olympic participants from others who live in the city and pay for Games.

Recommendation 7:

Enhance the public participation in small-middle projects

Public participation should always be welcome for some detail design faces. Especially for the projects of the existing venue, listening to the advice and thoughts from frequent users can be helpful to understand the right post-Olympic development path. Same for the Winter Olympic Games, when inserting the venues in the mountain area, involving the local communities to join the decision-making process can guarantee the post-Olympic sustainable performance. Let local people choose what they want is better than give them what has been made and they do not care about. Moreover, enhancing public participation will certainly spread the concept of sustainability and make it easier understood by the mass more effectively.

Recommendation 8:

Social and environmental sustainability in priority

Nowadays, the Olympic Games has become a cost-sensitive event. To ensure economic sustainability is important during preparation and celebration phase, even the recent Olympic Games are always over-budget. In post-Olympic time, instead of seeking for economic sustainability, focusing on social and environmental sustainability will be an option. In the current situation, the initial investment of the Olympic Games will rarely directly return the venue in a short time in the form of money. Instead, the investment will have feedback more often in the social and environmental aspects which are not easy to be measured by money. However, other indexes such as unemployment rate, poverty rate, CO2 emission, life span, sports facility utilization rate, etc. will directly reflect the Games' effects in society and environment. Ensuring the post-Olympic social and environmental sustainability probably will not bring instant feedback and profit, but in a long-term vision, they will bring innovation power, new developing point and reduce compensation to the loss due to economic development. Good results in social and environmental sustainability can

Recommendation 9:

Make Olympic Games fit our city

"Making Olympic Games fit out city" is borrowed from the opinion of Brence Culp, Los Angeles 2028 chief impact officer.¹¹⁶ After the Olympic golden time in 20th century, the Olympic is becoming a "hot potato" recently, and now, it is an opportunity to change our common attitude to the Olympic Games. It still will be the catalyzer

¹¹⁶ LA2028 Q&A: "radical reuse" in action, IOC, Oct.4 2018

for local development but play a different role than before. In the past, Olympic Games was strong and dominant, but now, host city collaborating with IOC will estimate the Olympic Games in different scales and depth to find the right position to insert Olympic Events inside current urban and social context. And IOC should be flexible to make possible adjustments that is helpful for the Games' sustainability in local context.

5.3 Conclusion and discussion

In more than one century history, the Olympic Games have a great contribution to the development of human society undoubtedly. Even though nowadays it is facing many problems, it is still the most influential event on this planet. Exploring the issue of post-Olympic sustainability will not only solve the Olympic crisis but also will set an example for human society of how sustainable development should be in the future life.

The cases of London, Tokyo and Beijing are summarized into three post-Olympic sustainable development models with different focuses and flexibility. For the forthcoming hosts, it is worth to learn from those experiences and lessons to figure out their suitable ways of post-Olympic development. While, nine recommendations provide personal suggestions to current Olympic sustainability framework and future hosts, even though some of them are general and hard to realize.

As architects and urban planners, what they should do is to make visionary proposals that could be “okay” for one-month Olympic Games and must be excellent for the whole society. Anything designed and built permanently should be qualified enough to carry Olympic memory and serve for Olympic legacy. Even though it looks like the work for the Olympic Games, it is true for the people who live there.

This thesis brief analyzes Olympic history, Olympic current situation, Olympic sustainability, post-Olympic sustainability development process and some cases of post-Olympic sustainable development. It is somehow now general for some sections and also might be lack of statistics. The main purpose is to collect useful information, different opinions and experiences related to the post-Olympic sustainability development issue, make discussion and propose some new ideas. Moreover, it would be my great pleasure to inspire someone else who is interested in the same topic.

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