

Sustainable Urban Development in Post-event Period

Case study about coupling between event space and urban space

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Abstract—This research focused on correlation between Event Space and Urban Space to figure out how to stimulate spatial coupling between two of them. This is necessary for sustainable urban development in post-event period. Case study includes the 1984 Olympic City: Los Angeles and the 1996 Olympic City: Atlanta.

Keywords—event space; spatial coupling; sustainable; post-event

I. INTRODUCTION

Mega-event has been regarded as a booster for urban development. However after short-term stimulation for those host cities, how could urban development be more sustainable in a long-term period puts forward a serious issue. In term of common characteristics about those facilities, including huge investment, high-speed construction and tough maintaining, original researches about mega-event only intensively focused on reuse of event facilities, but external public spaces around these facilities, ‘event spaces’, have not been paid close attention to yet.

Positive correlation between event space and urban space would transit event heritages into urban valuable resources instead of heavy burden. ‘Spatial coupling’ could show up dynamic mutual correlation between event space and urban space, which are related with three significant aspects. First is land use of event spaces and neighborhood areas; second is transportation connection between event spaces with other urban districts; third is spatial morphology of event spaces.

Case studies included two Olympic host cities: Los Angeles and Atlanta. It tried to figure out what different roles event spaces would be during hosting event period and post-event period, and how event spaces could be transformed adaptively and continuously so that coupling would happen between event space and urban space after a long-term development. This research also applied the lessons from American cases on specific legacies for event heritage in post-event period.

II. CONCEPTIONS

A. Event Space

‘Mega-event’ refers to the short-term political, economic, cultural and sports activities, such as the Olympic Games, the World Expo, the World Cup and other world-class events

etc, which could have significant influence on the host city in a long-term period [1].

‘Event Space’ refers to the open space surrounding event facilities constructed for hosting mega-event, such as: sports center or Olympic Park. Even through these are urban public spaces, some special characteristics, such as architecture landmark and place of belonging, could make difference between event spaces with other open spaces. In planning of mega-event facilities, these spaces are always supposed to be central part of urban public space system, but many cases showed that it was difficult to improve correlation between event spaces and urban space. Instead these spaces were left to be undervalued areas after mega-event. Activating event spaces would require smarter legacy for a quite long time.

B. Spatial Coupling

‘Spatial coupling’ is derived from the physical concept of ‘coupling’ (refers to two or more systems combined each other closely through interaction and mutual influence, which is dynamic correlation basing on positive interaction interdependence, mutual coordination and mutual promotion between each subsystem. In this research ‘spatial coupling’ refers to: event space and urban space build up a dynamic correlation in two aspects: material and non-material. Material ‘coupling’ relates with spatial indicators, including compatibility of functions, transportation connection and spatial penetration etc; Non-material ‘coupling’ includes additional correlation due to spatial coupling, such as: the sense of belonging, diversity of behavior and so on.

C. Sustainable Urban Development

There are a large amount of definitions about sustainable urban development. In term of mega-event host cities, one of significant issue is how to redevelop and revalue those event heritages in post-event period. In another word, if event facilities would be daily used by neighborhood or event space would become a meaningful public space for community even city, then sustainable urban development would be available in long-term period. One of evaluation indicator is spatial coupling between event space and urban space.

III. CORRELATION

Specifically, spatial coupling between event space and urban development could be influenced by three aspects: land use, transportation connection and spatial morphology.

A. Land Use

In term of land use, evaluation of spatial coupling between event space and urban space has different standard due to plan layout of event facilities has different model. Generally, there are three models for event facilities plan: Decentralized Model, Single-center Cluster Model and Multi-center Cluster Model [2].

In term of urban land resources, since event facilities are separately arranged in different districts all around the city without specific 'Sports Center', Decentralized Model is most efficient and flexible to make full use of existing urban facilities therefore event space would be much more easily integrated with the frame of urban development. In another word, spatial coupling of this model is more easily accomplished than other models. If event facilities would be located in residential communities or university campus, frequent daily mix use will be very helpful to realize spatial coupling. The 1948 London Olympic Games, the 1968 Mexico Olympic Games and the 1932 & 1984 Los Angeles Olympic Games are the cases.

Compared with Decentralized Model, since the majority of event facilities are put into a large sports center, 'Single Center' Cluster Model would require more land resources and could more effectively organize different competitions during hosting event period. As a result, it will be a big challenge and also a big chance to redevelop event space as a meaningful urban space which would become urban heritage in post-event period. Compatibility and mix use of event space and neighborhood area is very essential for spatial coupling between event space and urban space. The 1936 Berlin Olympic Games, the 1972 Munich Olympic Games and the 1976 Montreal Olympic Games are the cases.

Compared with the two former, since event facilities are organized in different districts to create several sports centers, 'Multi-center' Cluster Model is much smarter and more adaptive. The facilities are relatively combined together lead to higher efficiency, meanwhile these small sports centers are separated in the city so that the reuse of event facilities will be much easier. The 1992 Barcelona Olympic Games and the 2012 London Olympic Games are the cases.

B. Transportation Connection

In order to improve spatial coupling, transportation connection between event space and urban space is a vital and basic issue for a long-term urban development, which may has very different goal from short-term event. Which transportation system is more important for spatial coupling, daily commute or event commute, depends on reuse of the facility and space.

For those facilities still used for hosting all kinds of event competitions, concerts or exhibitions, parking capability and evacuation requirement of event space is necessary. Mass rapid transit, which would connect event space with other urban districts as convenient as possible, also needs to be

necessarily considered. The Olympic sports center, large-scale or professional stadium normally belongs to this group.

As regards as those facilities located in residential community or campus, daily use such as fitness or recreation activities would play an important role in their maintaining and redevelopment. Therefore, daily commute such as bicycle and pedestrian routes, or bus transit should be improved.

When the facilities are compatible with different functions, different transportation services should be optimized depending on supply and demand of commute.

C. Spatial Morphology

Except for land use and transportation connection, high quality of event space is another key point for spatial coupling between event space and urban space. Generally there are a large amount of spaces around event facilities which played an important role in parking, evacuation, and celebration during event. While in post-event period, these spaces should be transformed into urban spaces so that spatial coupling could be improved substantially.

Spatial morphology would be helpful to provide a perfect supporter for various behaviors happening in space. There are two essential characteristics of space for redevelopment. One is open, which means event spaces should be opened for public, much longer time much better, in order to get more vitality from urban users. The smarter strategies are needed for management, such as time-share parking, making accessibility of entrances, using transparent fences etc. Correspondingly, automobile accessibility is one important consideration and spatial form should be a recognizable shape and have larger capability.

Another one is diversity, which means event spaces should be compatible with multiple activities basing on use of the adjacent facility. For example, if the facility is mainly for hosting different competitions, the open spaces around it would be utilized as training ground or training camp, celebration plaza, advertisement promotion site or outdoor festival area. If the facility is for neighborhood residents, the spaces would be organized more diversely to be suit for fitness and recreation activities, children and family activities. Correspondingly, spatial form could be more varied and flexible. The scale or material of spaces also would be flexibly decided by its diversified uses. Bicycle or pedestrian route is necessary for integration of those spaces.

IV. CASE STUDY

A. Los Angeles

The main reason why the layout of 1984 Los Angeles Olympic Games facilities based on the Decentralized Model is the choice of economic conditions. Since the 1976 Montreal Olympic Games has a serious fiscal deficit, Los Angeles bid to host of the Olympic Games without other competitors. But due to the lack of confidence to Olympic Games economy operation in 1978, an amendment was passed by a statewide ballot, which would not allow to use public fund to host the 1984 Olympic Games. Therefore, for the first time, the Olympic Games was undertook by private

enterprises. Due to relatively sufficient sports facilities in Los Angeles and neighborhood cities, as well as saving costs, the Los Angeles Olympic Games Organizing Committee decided to make full use of existing resources and construct new sports venues as little as possible [3]. Eventually 23 sporting venues had been selected and organized within two hundred square miles around the city, compromised with the population density. Only three sites had been newly built for the Olympic Games in Los Angeles, while other facilities just had been renewed according to the requirement of Olympic Games [4].

Not only during hosting event period but also in post-event period, the geographical spread of the venues accomplished several things at once. When the Olympic Games was processing, the traffic crunch was eased by spreading it to the point of insignificance, as well as the committee was allowed to divide its vast organization into 23 neatly separate fiefdoms. And, most importantly, it gave the entire region an opportunity to play a direct role in the Games [5].

While in post-event period, some facilities could continuously be host for several sports competitions because they are professional venues; some facilities could be high-frequently used since they located in university campus or residential communities; some facilities were combined with other urban facilities to integrate a meaningful urban public space.

The Dodger Stadium in Los Angeles is one of the world's finest baseball stadiums, which have been the site of the Major League Baseball All-Star Game and eight World Series before Exhibition Baseball during the 1984 Olympic Games. It also hosted the semifinals and finals of the 2009 World Baseball Classic as well as a soccer tournament in 2013 featuring four clubs, and also a regular season game in 2014 as part of the NHL Stadium Series [6]. Obviously the Dodger Stadium mainly hosted several baseball events before and after the 1984 Olympic Games. Correspondingly it has a large parking capability for 16000 automobiles [7] and open space around the stadium was suitable for evacuation and parking instead of pedestrian. It is hard to be concluded that spatial coupling between Dodge Stadium Park and neighborhood community is very strong.

The Los Angeles Memorial Coliseum which had hosted the 1932 Olympic Games, hosted the Opening and Closing Ceremonies in 1984, in addition to all track and field events. Similar with the Dodge Stadium, the Coliseum is a professional football stadium, which is now primarily the home of the University Southern of California (USC) Trojans football team and the home of the Los Angeles Rams. Most of USC's regular home games, especially the alternating games with rivals UCLA and Notre Dame, attract a capacity crowd [8].

Differently, since the Coliseum is next to USC, USC also rents the Coliseum to various events, including international soccer games, musical concerts and other large outdoor events, which is very helpful for high-usage of the stadium in long-term period.

Furthermore, since the Coliseum is located in the Exposition Park, combined with Los Angeles Sports Arena,

Natural History Museum, California Science Center, California African American Museum and Rose Garden, the Coliseum has formed a valuable urban public space with historic landmarks. On the one hand, diversified spatial morphology would provide high-quality spatial experiences, meadow, garden, plaza, parking lot and pedestrian routes supported for different behaviors. On the other hand, vitality from daily-use would improve the value and characteristics of this urban space. In a word, the spatial coupling between the Coliseum and urban space realized great model.

B. Atlanta

As a kind of Multi-Center Cluster Model, events of the 1996 Atlanta Olympic Games were held in a variety of areas. A number were held within the Olympic Ring, a 3 mile (4.8 km) circle from the center of Atlanta. Others were held at Stone Mountain, about 20 miles (32 km) outside of the city. To broaden ticket sales, other events, such as soccer, occurred in various cities in the Southeast [9]. Redevelopment of facilities took advantage of the Olympic Ring in long-term period. Spread out in different areas which are relatively compacted within 3 mile circle, most facilities could be reused depending on the different neighbor communities: residential, commercial or university campus.

The most important point is that the 3 mile Olympic Ring made the transportation connection between the facilities much easier. Almost 5-15 minutes bus-trip not only made event commute between different venues more convenient, but also made every facility more accessible in downtown Atlanta.

To optimize urban space is another vital legacy of the 1996 Atlanta Olympic Games instead of constructing new facilities. Similar with the legacy of the 1984 Los Angeles Olympic Games, around \$500 Million of taxpayer money was used on the physical infrastructure including streetscaping, road improvements, Centennial Olympic Park, expansion of airport, improvements in public transportation, and redevelopment of public housing projects[10] but neither paid for the actual Games and the new Venues themselves[11]. As a result, new impressive urban public spaces have been created for event, and then have integrated with other urban spaces after event. Centennial Olympic Park is a great example. Built for the event, Centennial Olympic Park is the city's lasting memorial of the games. The park initiated a revitalization of the surrounding area, and now serves as the hub for Atlanta's tourism district [12]. The spatial morphology of park is greatly diverse. Olympic Memorial Plaza is the historic center of the park; Major urban landmarks and Sky wheel identify the features of Atlanta downtown; Fountain area, meadow and playground make the park to be a children heaven. The small blocks in downtown and the streetcar make park to be more accessible. This event space has been transformed into urban space successfully.

Another impressive smart legacy is continuous improvement of facilities, which illustrates adaptive renovation of event facilities for new use is necessary in post-event period. The mid-rise dormitories were built for the Olympic Village, which became the first residential

housing for Georgia State University (Georgia State Village), are now used by the Georgia Institute of Technology (North Avenue Apartments). Centennial Olympic Stadium was converted into Turner Field, which became the new home of the Atlanta Braves baseball team from 1997 to 2016. The Braves' former home, Atlanta-Fulton County Stadium, was demolished and the site became a parking lot for Turner Field [13].

Turner Field is also a great example to show how sports complex could be integrated with urban space. Fan Plaza is a grand entry plaza, which serves as the primary entrance and exit to the park, and is the hub of pregame and postgame activity at Turner Field [14]. The area features the Clubhouse Store, as well as multiple dining options and drink stands, the radio pregame and postgame shows broadcast, and live music performance. This space compactly connects urban space and Turner Field. Along the left field corner of the upper level and sponsored by Coca-Cola, Sky Field is a large standing room area from which fans can view the game. The area contains a base path which kids can run during the games, as well as an unobstructed view of the downtown Atlanta skyline and the former Atlanta-Fulton County Stadium site. This space integrates urban view into event space. Along the field level under the left field seating area, Scout's Alley is an area featuring interactive baseball-themed games targeted at younger fans. This space expands sports interest to urban citizens. Apparently spatial coupling could be accomplished from different aspects.

V. SUMMARY

In summary, after hosting mega-event, correlation between event space with urban space should be considered seriously because it would decide whether event space could be integrated into urban space or not somehow. This is necessary for sustainable urban development in post-event period. Correlation between two of them has related with three aspects: land use, transportation connection and spatial morphology. Generally positive and dynamic correlation could stimulate spatial coupling, which means event space and urban space would be combined each other closely through interaction and mutual influence, eventually event space could become valuable urban resource. Spatial coupling is one of evaluation indicator for sustainable urban development.

Through case studies about Los Angeles and Atlanta, spatial coupling could be available basing on different legacies for different event spaces. Some should be considered in pre-event period, while others would be figured out according its renovation and redevelopment in post-event period. In a word, for mega-event host cities, smarter legacy for redevelopment of event heritages is essential for sustainable urban development in a long-term period.

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