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WINTER OLYMPICS AND SPATIAL PLANNING: BETWEEN LOCAL TERRITORY AND REGIONAL SPACE

> A miniature city, replete with modern conveniences and facilities, had arisen magically atop the hills, within eyesight of the great Olympic Stadium – atop the modern Mount Olympus, below which lay the modern Plains of Elysium . . . A miniature world was here set up, rigidly protected from the world outside. *(Official Report of the Organising Committee of the Los Angeles Olympic Games,* 1932).

Introduction. – The central argument of this contribution is that the urbanisation of the Western world during the 20th century can only be fully understood by considering the contribution of significant urban events. The Great Expos and the Olympic Games are two clear examples of this type of urban mega-event (Roche, 2000). Therefore, the study of the different urban planning experiences of the cities that organised the Winter Olympic Games during the 20th and 21st centuries allows us to propose the hypothesis of an evolution from mountain tourism resorts to specific and more complex urban planning models. Through the evolution of the 'Olympic Village', progressively built according to criteria similar to those of the Summer Games, the endpoint of this process would be the proposal of metropolitan and regional strategies (della Sala, 2023). According to the most recent experiences, the current model combines several places in a network: on one hand, the mountain resort areas and, on the other, the central city, as an expression of the actual scope of the modern metropolitan phenomenon.

Impact of the Winter Olympic Villages. – The analysis of Olympic Villages advanced by Muñoz (1996) allows us to observe the urban dimension of housing through four fundamental aspects:

i. Aspects related to the evolution of the architectural idea, the different housing types and the different formal languages used.
ii. Aspects related to the evolution of city plans, from the choice of the urban concept model to the basis of the operations adopted.

iii. Aspects related to the conception of the Olympic Village as an urban instrument, from the production of the city's projects to the insertion of the urban context in the post-Olympic period.
iv. Moreover, the change in the economic circuit and the different types of management require a specific section (Muñoz, 1996).

Therefore, the study by Muñoz (1996) allows us to observe the first classification of the different urban models adopted by the candidate cities for the construction of the Summer Olympic Village, which is: «the garden city, the satellite city, the urban centre and the metropolitan city» (Muñoz, 1996, p. 176). The following classification helps us to identify some common patterns among the summer editions held from London 1908 to London 2012. Therefore, as we will observe in the original studies, the Winter Olympic Villages can be classified through four urban models: the satellite city, the mountain centre, the metropolitan city and the *cluster* (della Sala, 2022). The research analyzes the spatial models of the candidate cities and allows us to reflect on the evolution of the concept of Olympic accommodation in the summer and winter editions. Initially, the idea of the Olympic Village was introduced by Coubertin in 1924, who wanted to promote the creation of a sports city capable of fostering cultural exchange between its inhabitants. Since this historical moment, different models of Olympic Villages have been observed for the summer edition, which respected the forms and typologies of the typical dwellings of each historical moment.

Furthermore, through the classification advanced by Wimmer (1976), Muñoz (1996), analysing the evolution of the form and context of the Olympic Village, advances the following models and phases that were observed in the summer editions:

1. Olympic Village and urban planning. The utopian content of Olympic urban planning.
2. The garden city and the suburban world. The "inaugural" villages.
3. The satellite city and the city machine. The people of the 1960s.
4. The central city and the accumulation of leisure. The people of the 1970s.
5. The metropolitan city and the central "non-place". The people of the last two decades.

Therefore, as we will observe in the following section, the Olympic Villages, in their history, have had to adapt to different transformations and modifications to be included in a long-term urban development framework. However, some structural changes were obligatory to respond to the new leisure and housing needs of recent years. The city-village

model was entirely replaced by the region-metropolis model, which continues to define the different types of spatial models, complicating the definition of services and the public administration's responsibility in the Olympic project. The evolution of the Olympic Villages over time reflects the evolution of the citizens' lifestyle and the athletes' demands over time. The Olympic Village should be seen as a result of Olympic time in a contextual territory that will need to fit into a permanent physical structure, responding to the specific housing requirements of each host site. In the following paragraph, we will analyse the different spatial models adopted so far for constructing the Winter Olympic Village in the host territory and their current economic value.

The Winter Olympic Villages value. – The table lists the current values of the Winter Olympic villages according to the methodology described above. The proposed Olympic villages in the period between 1952 and 2022 were considered. The dollar values refer to the 2020 inflation rate to avoid including those observed during COVID-19. The comparative analysis helps us understand that the average construction cost of the Olympic Village is 782,974,250.03 million dollars (tab. 1). The most expensive project was the Olympic Village in Beijing 2022. Finally, the Albertville Olympic Villages, set up using temporary hotels and resorts, became the most economical and sustainable solution[1].

[1] Official reports available at the Olympic Studies Library in Lausanne were consulted to identify the costs of the Olympic villages. In addition, the Library of Olympic Studies in Barcelona supported consulting the materials. The inflation rate was added after identifying the final cost of each permanent Olympic Village in local currency. The annual inflation rate was determined using the study's central bank databases of the analysed states. Subsequently, the current value was converted into dollars for use within global monetary policies. How do you calculate today's value of money after inflation? There are various methodologies for assessing monetary value over time. The result is obtained through the interest formula or Consumer Price Index (CPI) procedure, depending on the data availability. Using the compound interest formula. The formula used to identify the current cost is as follows: FV=PV (1+1) n [1]. In this case, the future value represents the final amount obtained after applying the inflation rate. Using the CPI formula. The following formula can only be used if you have the initial and final value of the CPI index. *Final value = Initial value *. CPI finalCPI initial.* In conclusion, in states such as Germany, Australia, Korea, and Japan, the currency has changed value over the years, or in some cases, such as Australia, new money was replaced and introduced after the end of British colonisation. It should be noted that only the costs declared by the various organising committees in the official reports have been identified. Furthermore, using the CPI given the period considered was not possible.

However, creating tourist areas has enabled the entire region to reposition itself in the world tourism market.

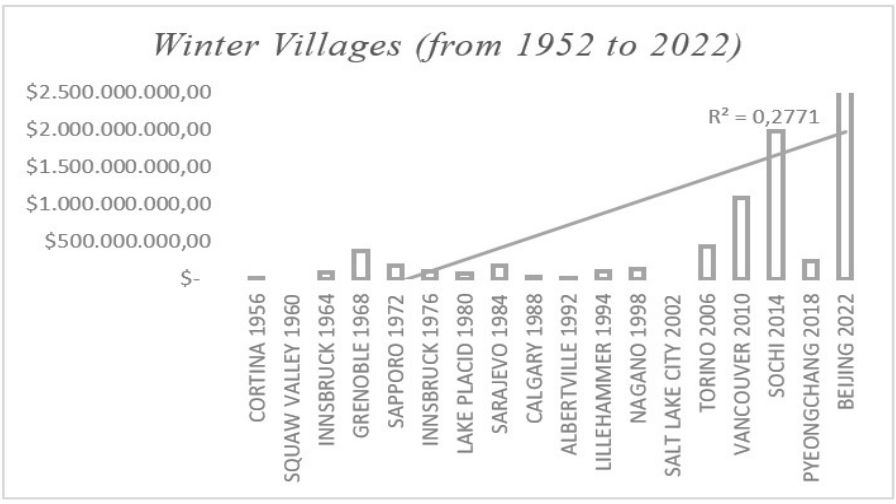
Tab. 1 – *Cost and the current value of the winter Olympic Villages from 1952 to 2022*

Winter Villages (from 1952 to 2022)			
Host city	Cost	Currency	Actual Value $
Oslo 1952*	n/a	n/a	n/a
Cortina 1956	284,859,851,00	LIT	4.839.534,07
Squaw Valley 1960	n/a	USD	n/a
Innsbruck 1964	211,488,000,00	Schilling AU	99.402.890,00
Grenoble1968	25,626,786,00	FRA	380.044.034,04
Sapporo 1972	7,110,000,000,00	JPY	192.809.776,67
Innsbruck 1976	401,892,900,00	Schilling AU	102.085.130,76
Lake Placid 1980	22,692,771,00	USD	72.264.762,50
Sarajevo 1984	306,513,000	DINARO	184.686.302,25
Calgary 1988	13,500,000,00	USD	29.947.760,99
Albertville 1992	329,388,00	FRA	783.770,00
Lillehammer 1994	650,000,000,00	NOK	108.129.636,05
Nagano 1998	159,000,000,00	JPY	145.588.687,83
Salt Lake City 2002**	n/a	USD	n/a
Torino 2006	297,000,000,00	EUR	436.497.230,42
Vancouver 2010	1,148,500,000,00	USD/CAD	1.096.905.512,84
Sochi 2014	10,328,072,400,00	RUR	1.989.420.169,50
PyeongChang 2018	1,323.900,000 ,00	KRW	245.452.086,58
Beijing 2022	6,660,596,000	USD	6.660.596.000,00
MEDIA			782.974.250,03
MAX			6.660.596.000,00
MIN			783.770,00

*Olympic Village included in public expenditure for the city's future development.
** Leasing agreement with the University of Utah.
Source: della Sala, 2022.

Figure 1 shows the evolution of costs during the entire period considered. Looking at the trend line, it can be stated that the cost of the Winter Olympic Villages from 1952 to 2022 increased by 27.71%.

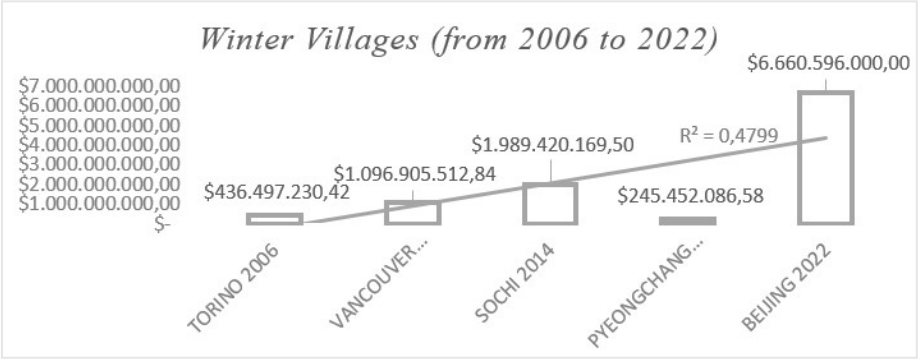
Fig. 1 *Evolution of the value of the winter Olympic Villages from 1952 to 2022*



Source: della Sala, 2022

Whereas, if we consider the Olympic Villages of the 21st century, we can observe an increase in the investment cost of 47.99% (fig. 2).

Fig. 2 – *Evolution of the value of the winter Olympic Villages from 2006 to 2022*



Source: della Sala, 2022

Therefore, looking at the following data, the cost of Olympic villages will continue to exceed the minimum threshold of 1 billion shortly. However, the housing solutions in the winter games include multiple Olympic villages in observation of the spatial dimension of the event. As observed in Beijing in 2022, the investment exceeded 6 billion.

However, housing solutions proposed through partnerships with private companies for developing hotels or lodges in mountainous locations are a good practice that significantly reduces public investment in an area subject to tourism speculation.

Evolution of the Winter Olympic Villages. – Before analysing the different evolutionary stages and spatial patterns of the Olympic Villages, the study proposes an observation of the evolution of the distances between the two main structures in the summer and winter editions: the Olympic Village and the Olympic Stadium. In addition, for the observation of the evolution of the spatial patterns outlined above, the distances between the Olympic Village and the administrative centre of winter host cities were analysed in table 2. The following parameters allow us to reflect on the evolution of the location of the Olympic Villages in the winter editions held over time. Consideration of the location of the Olympic Villages will allow us to analyse the spatial patterns observed over time and to advance new hypotheses on the evolution of the Olympic Village as an urban piece and central urban element of the Olympic event.

In the winter edition, we can observe an average distance of 16.74 km between the Olympic Village and the Olympic Stadium. Meanwhile, the distance between the Olympic Village and the administrative centre has reached an average of 22.31 km.

Moreover, the distance between the Olympic Village and the administrative centre continues to evolve, and for the Beijing 2022 winter edition, the maximum average distance between the administrative centre of the cities and the Olympic Village in the mountain venues has been raised to 115.63 km.

In addition, some winter editions, such as Oslo, Turin, Sochi, PyeongChang, and Beijing, have established multiple Olympic Villages at venues around the country. Table 3 shows the specific distances of each Olympic Village across an organisation with multiple permanent accommodations.

Tab. 2 – *Distance of the Olympic Village from the stadium and the Winter Olympics administrative centre*

EDITION	Distance from the main stadium	Distance from the administrative centre of the city
OSLO 1952	2.77 km (average)	4.87 km (average)
SQUAW VALLEY 1960	0.8 km	13 km
INNSBRUCK 1964	5.8 km	5.0 km
GRENOBLE 1968	600 m	4.0 km
SAPPORO 1972	1.7 km	9.1 km
INNSBUCK 1976	5.6 km	6.4 km
LAKE PLACID 1980	10.1 km	10.4 km
SARAJEVO 1984	8.6 km	8.2 km
CALGARY 1988	1.3 km	8.6 km
ALBERTVILLE 1992	36.3 km	35.1 km
LILLEHAMMER 1994	4.3 km	3.4 km
NAGANO 1998	3.8 km	9.3 km
SALT LAKE 2002	1.6 km.	9.6 km
TURIN 2006	62.17 km (average)	65.43 km (average)
VANCOUVER 2010	1.2 km	1.5 km
SOCHI 2014	40.13 km (average)	64.33 km (average)
PYEONGCHANG 1918	13.4 km (average)	27.8 km (average)
BEIJING 2022	101.17 km (average)	115.63 km (average)
MEDIA	16.74 km	22.31 km
MAX	101.17 km	115.63 km
MIN	0.6 km	1.5 km

Source: della Sala, 2022

Tab. 3 – *Distance of Olympic Village sub-venues from the stadium and the Winter Olympic Games administrative centre*

Phase I	1924-1948	Mountain locations Temporary accommodation	Prospects for the creation of an Olympic Village Existing sports facilities Use of hotels and resorts
Phase II	1952-1964	Cities with more than 100,000 inhabitants Permanent accommodation	Construction of the Olympic Village Different areas for the celebration of the event Developing a public policy for Olympic accommodation Growing interest in winter sports
Phase III	1968-1988	Regional expansion Residential accommodation	Encouragement for the creation of new sports facilities Development of the infrastructural system for the transfer of athletes. The foundations are laid for the development of residential accommodation in the post-Olympic phase. New transformation model
Phase IV	1992-2002	Increase in Olympic space Tourism development tool	Increase of competitions and athletes Construction of multiple Olympic Villages New housing solutions (universities, demountable) Olympic space organised in multiple locations Respect for the environment
Phase V	2006-2022	Olympic Village in the city and Olympic Villages at competition venues Stimulus for the transformation of the regional system Metropolis	Main Olympic Village in the metropolitan city Mixed economy for the construction of the residences in the mountain places The Olympic Village as a tool for the promotion of sports tourism in mountain areas Increased emphasis on environmental protection and the sustainable development Legacy begins to enter into post-Olympic planning
Phase VI	2026 - Future	Multiple Olympic cities Multiple regions	Regional development Tool for the reorganisation of the economy of the Olympic area Creation of new mixed accommodation solutions Development of new infrastructure for the transport of Olympic athletes

Source: della Sala, 2022

The last winter edition of Beijing 2022 allows us to observe a new spatial dimension of the event, which in some cases reaches a distance of 239 km from the administrative centre of the city to the Olympic Village in the mountainous areas. In conclusion, the dimension of the winter edition has been transformed into a regional organisation, which implies new resources in infrastructural works to connect the Olympic sub-venues temporarily.

The different stages of the development of the Winter Village on the regional territory. – Phase 1: Promotion of mountain tourism in resorts (1924-1948). Since the first winter event in Chamonix in 1924, the event has been organised in mountain areas with ski resorts, a sports pavilion and accommodation facilities. As noted in table 2, up to Oslo 1952 the Winter Olympics were scheduled in locations with a strong tourist vocation to exploit winter sports. The mountain sites chosen had accommodation facilities, or new projects were prepared in anticipation of the development of winter tourism in mountain resorts. In terms of historical development, in 1952 Oslo was considered the first winter city to provide a permanent Olympic village (Delorme, 2014).

Phase 2: Development of a public housing policy (1952-1964). The 1952 Oslo project was conceived through a polycentric spatial organisation that included the construction of three Olympic Villages in the urban fabric of the Norwegian capital. Thus, 1952 marked the moment when the Winter Olympic Village became a spatial transformation model similar to that observed in the summer edition. The Olympic Villages were organised in three different areas and included in a city transformation plan (Illa, Sogn and Ulleval). Each district was intended to be self-sufficient and become a new residential accommodation in the phase following the event (COJO, 1953). The growing interest in promoting winter sports would be a new instrument city would use to include the Olympic event in urban transformations. Subsequently, Innsbruck's 1964 edition proposed the construction of an Olympic Village in an area of the city included in a central state-owned housing development plan (COJO, 1964). In this phase, we can observe an increase in public funding for constructing new permanent residential housing stimulated by the Olympic bid.

Phase: 3 Mixed Housing in a Regional Development Dimension (1968-1988). With the increase in size and interest in winter sports, cities began to promote a new spatial model in an Olympic territory. Thus, Grenoble's

1968 bid transformed the winter event into a regional dimension. In addition, the growing demand for infrastructure enabled Grenoble to complete a new project supported by the central government to increase tourism and trade in mountain areas[2].

Grenoble's bid promotes new housing solutions in the city's central fabric, including creating temporary facilities for the competition venues. The structures and architectural style of the Olympic Village have been proposed in a rationalist style that respects Le Corbusier's idea of building new functional cities. The infrastructure integration within the housing project (highways, roads, airports, and railway lines) has determined a new model for organising the Olympic event.

In addition, identifying the Olympic Village as a priority urbanisation area led to its growing interest in regional development. Subsequently, in 1972, Sapporo redefined the urban regions and regional infrastructure, as Grenoble did in 1968 (Kagaya, 1991). Awarding the Games to Sapporo heralded a new era for metropolises with a population of over 1 million. Therefore, the Japanese metropolis marked a milestone in Olympic history. The Olympic Village was conceived as a catalyst for a housing plan that ensured the city's availability of post-Olympic housing. The architectural style was block-like structures aligned in a large area in the Japanese suburbs.

The Sapporo Olympic Village promotes a new construction model. The complex was realised by the construction of 20 residential blocks ranging in height from five to 11 storeys (COJO, 1973). Furthermore, Sapporo was the first Olympic city not to have sports facilities for the event, which until Grenoble were mandatory for the Olympic event. In the following steps, we will observe how the housing emergency influences the planning and construction of residential projects. Accommodation in mountainous locations (venues of the Olympic competitions) continued to be provided by constructing new hotels or resorts. Later, the 1976 Innsbruck edition proposed the construction of a new Olympic Village in an area adjacent to the one built for the 1964 edition (OCOG, 1976). Therefore, after the Olympic event, the area was transformed into a new residential district for citizens, promoting an expansion of the district built for the 1964 event. Until Calgary 1988, the number of athletes increased, and Olympic cities started to promote new

[2] The Grenoble project was financed by the central government and the French central bank in a framework of international trade development.

solutions for Olympic housing projects. Calgary, in particular, is recognised as the first winter edition city to propose innovative university-type housing solutions (Olds, 1998). The organising committee's focus on building new sports facilities for university students and promoting winter sports (COJO, 1988) added a new dimension to Olympic housing projects.

Phase 4: Tourism Development Tool (1992-2002). Albertville 1992 is recognised as the first project that proposed multiple accommodation solutions in the different mountain resorts and the central Olympic village in an area included in the tourism development of the entire region. However, Albertville 1992 proposed a polycentric spatial model that included and strengthened the region's position as an international tourist centre (Terret, 2008). The enormous investments for the event allowed for the construction of new accommodation and hotel facilities throughout the Olympic area, renewing the entire mountain infrastructure system to reposition the resorts in the infrastructure system. However, after the Albertville edition, the IOC was concerned about the event's size and the athletes' dispersion in the different mountain resorts. Therefore, after the Albertville Olympic event, the winter edition will become a tool to rebuild new territories and reposition the cities in a winter tourism market[3].

At Lillehammer in 1994, the organisers had already introduced the topic of temporary accommodation structures for the athletes. In addition, the Organising Committee presented the theme of sustainability and sustainable development by providing 185 removable wooden huts (COJO, 1995). The solution adopted by Lillehammer served as an inspiration for the entire Olympic movement and future cities. The Olympic Village in Lillehammer was dismantled in the post-event phase. Therefore, since Lillehammer, the themes of sustainability and environmental friendliness have become essential for the winter edition. However, significant infrastructural changes and the increasing scale of the event compromised the environment and regional development of the candidate cities (Spilling, 1996). The Lillehammer edition agreed to add sustainability as the third pillar of the Olympic movement within the Olympic Charter. Subsequently, in 1998, Nagano proposed the construction of a new district and adjacent sports facilities. Nagano's bid

[3] The number of overnight stays increased from 100,000 in 1989 to 700,000 in 1995. Thus, in 1996, Brides' financial situation aligned with expectations. The municipality's budget grew from 15 million francs in 1992 to 25 million francs in 1996 (Sordet, 1996).

was part of a series of regional transformations that included the city in the new regional economy. The construction of the railway line between Nagano and Tokyo would enormously change the city's economy. The Nagano Olympic Village was planned to be converted into private residences on the outskirts of the city in the post-Olympic period. The Village was built by constructing 23 residential blocks ranging in height from 2 to 4 storeys (COJO, 1999). Subsequently, Salt Lake proposed university-style housing solutions in 2002, as in Calgary in 1988 (OCOG, 2002). The Salt Lake project achieved its goal of reducing carbon emissions, and the event was recognised as one of the most sustainable in the world.

Phase 5: Multiple Olympic Villages in a Regionalisation Context (2006-2022). Subsequently, in the fifth phase, the Turin 2006 edition introduced a new project that will again reconsider the spatial dimension of the event. The Turin edition will be the first in the 21st century to implement sustainable development practices by applying a strategic environmental development assessment throughout the Olympic process. The organisers proposed a new spatial model that included the metropolitan city as the venue for the ceremonies, ice sports competitions and the central Olympic Village, and, on the other hand, proposed a spatial organisation in two mountain resorts: Bardonecchia and Sestriere. The planning of the three Olympic Villages and the spatial dimension of the Olympic event is transformed the area permanently, favouring an increase in winter tourism and the possibility of attracting new markets to the city. The Olympic Village was designed in a disused area that had been included in the development plan of the city of Turin and that, in the post-Olympic period, would become a mixed area: services, residences, shops and offices. However, the Turin Olympic Village never became a mixed area, as some lots were unsold, and the area suffered from structural problems that 2012 allowed the occupation of citizens waiting for political asylum.

On the other hand, the lodgings arranged in the municipalities of Sestriere and Bardonecchia from the beginning were intended to be converted into hotels and holiday flats. The construction of the Olympic Village in Bardonecchia was included in a regional development plan by financing the reconstruction and reconfiguration of a 1930s building. Meanwhile, the Sestriere Olympic Village was realised by a private company, which undertook the construction of the resort with the commitment to offer it free of charge to the organising committee during the Olympic event. Turin's transformations were emblematic of new post-

industrial metropolises' regeneration and transformation processes (della Sala, 2022). This strategy aimed to extend the benefits of the Olympic investment beyond the city, i.e. to the entire region, thanks to the possibility of improving ski facilities and facilities and extending the tourist season (Dansero, 2002). Therefore, the dimension of the winter event in the fourth phase will turn into a metropolitan event that will be a source of inspiration for regional infrastructure development.

Subsequently, Vancouver 2010 advanced a new mixed financing model by introducing a new post-Olympic planning model that will be a tool to promote long-term Olympic investment (VanWynsberghe, Derom, Maurer, 2012).

The City of Vancouver and the Organising Committee planned to build the Olympic Village in an area included in an urban redevelopment project. Thus, the construction of the Olympic Village took place in an abandoned area that, thanks to private participation, could be completed and offer new residential accommodation in the post-Olympic period. The new neighbourhood consisted of 37 buildings ranging in height from 5 to 10 storeys; in the post-Olympic period, it was reconfigured and transformed into a central space of the Vancouver metropolis (COJO, 2010). However, the Vancouver Olympic Village will manifest other problems related to Olympic building speculation in the post-Olympic period (Scherer, 2011). The goal of developing mixed market housing was changed to provide only 10% of the planned 30%. In the post-Olympic period, rising rental prices increased evictions in the city (Essex, 2017). At the Sochi Games in 2014, a territorial organisation was proposed as a crucial step in the expansion of the new Olympic event to locations with a subtropical climate (Scott, Steiger, Rutty, Johnson, 2015). The event intended to develop a new territorial system by building new tourist sites and planning multiple Olympic villages connected with a railway system. After Sochi, the size of the event will continue to grow, becoming a strong stimulus for the transformation of the regional system. The event will undoubtedly raise new questions about respecting and protecting the environment. The organisers have proposed a solution based on three Olympic villages (OCOG, 2015). The Olympic Village in the city is converted into residences in the post-Olympic period, while the Olympic Villages in the mountains are converted into hotels and resorts after the event, promoting tourism at the site. However, the post-Olympic edition has been widely criticised for the considerable financial investment and the distances between the Olympic venues. The Sochi edition continues

to raise questions about post-Olympic development even today. PyeongChang and Beijing 2022 will be other editions using the Olympic accommodation to promote sports tourism in mountain resorts. PyeongChang has provided a metropolitan cluster model with a sub-campus and two Olympic villages that will be used as residential accommodation in the post-Olympic period. However, residences in the mountain areas have yet to be earmarked for tourism development.

On the other hand, Beijing 2022 will make the Chinese metropolis the first city in the world to host both the summer and winter editions. This edition represents a critical milestone in the metropolitan and regional dimensions of the Winter Olympics. The spatial model is strongly inspired by the dimensions of Turin 2006, which envisaged the organisation of three Olympic Villages in a regional territory. The central Olympic Village was built in an area bordering the Summer Olympic Village and, in the post-Olympic period, will be offered as a residence by public tender. Meanwhile, at this stage, the Olympic Villages in the mountain villages are being built to become tourist accommodations in the post-Olympic period.

Phase 6: Tool for infrastructural development of tourism sites. Multiple cities, multiple regions (2026-Future). In this last phase, the distance between the metropolis and the Olympic venues will reach an average of 115.63 km and will promote a new form of Olympic development as a precursor to the joint candidature of Milan-Cortina in 2026 and the possible awarding of Barcelona-Pyrenees in 2030. Beijing in 2022 opened a new era for ephemeral bids, which will only use the metropolis as a promotional tool to award the event and exploit the tourism and service benefits. Therefore, the Metropolitan Olympic Village has become a key element in the housing planning of the world's future metropolises, inscribed in the new urban dynamics of consumer societies. Furthermore, the Milan-Cortina 2026 edition will include three regions in the northeastern part of Italy by organising two main cities and 13 secondary venues. This dimension will lead to a new evolution of the winter event, becoming a new instrument for organising the economy of almost 1/5 of an entire country. In addition, developing new infrastructures will be a new challenge for the candidate cities. The new candidatures of Barcelona-Pyrenees 2030, France 2030, Switzerland 2034, and Italy-Slovenia-Austria 2038 make it possible to identify a new extraterritorial dimension that the Winter Olympics may reach shortly.

Tab. 4 – Stages of the Olympic Villages at the Winter Olympics

Phase I	1924-1948	Mountain locations Temporary accommodation	Prospects for the creation of an Olympic Village Existing sports facilities Use of hotels and resorts
Phase II	1952-1964	Cities with more than 100,000 inhabitants Permanent accommodation	Construction of the Olympic Village Different areas for the celebration of the event Developing a public policy for Olympic accommodation Growing interest in winter sports
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Phase VI	2026 - Future	Multiple Olympic cities Multiple regions	Regional development Tool for the reorganisation of the economy of the Olympic area Creation of new mixed accommodation solutions Development of new infrastructure for the transport of Olympic athletes

Source: della Sala, 2022

Discussion. –The Olympic restructuring of the city and the sites cost million euros. Despite the fact that the IOC financially supports the Organising Committee, the city, the town and the region must cover all investment in the required sports infrastructure (Preuß, 2004). The Olympic Games and the Great Expos have the advantage of providing the host cities with new buildings and more efficient communication routes. The villages - designed as shelters for athletes and occupied by residents after the Games - to communicate a specific urban image at the service of creating the image the host city intends to project internationally.

The analysis proposed by Muñoz (1996), put many aspects related to the evolution of the architectural idea, to the evolution of city plans, to the conception of the Olympic Village as an urban instrument and the change in the economic circuit It has made it possible to bring out four urban models linked to five phases of the design of Olympic villages and the related construction costs. In addition, it was examined the evolution of the distances between the two main structures in the summer and winter editions: the Olympic Village and the Olympic Stadium.

Over the years, the costs of building the Olympic villages have increased, albeit with lower investments than those of the Summer Games. The paper attest to what has happened because the Olympics are a show of political strength by the host nation.

Over the course of the editions (after Los Angeles 1984) the participation of private individuals has grown in the organization of the Olympic event. In the Winter Games of Milano Cortina 2026, we will have the opportunity to analyze the complexity of the Olympic site distributed over several locations and the fragility of the mountain territory.

An emblematic case study is that of the Turin 2006 Winter Olympics. The candidature was initially promoted by a very small élite, but the idea of hosting the Games was soon embraced by the majority of the population. The interventions were oriented in two main directions: the strengthening and qualification of the sports, recreational and accommodation offer, partly in Turin and partly in the Valleys, and the improvement of accessibility and mobility of transport.

The Olympic heritage in the area can be traced back to two types: the material heritage represented by the provision of facilities and the intangible heritage aimed at the development of cultural tourism and the

creation of a new positioning of the city. Tourism is a constant theme in research for the implications of the Olympic Games. It represents one of the most loudly proclaimed goals of each edition (see, for example, Gold, Gold, 2007).

A city hosting the Games is a "work in progress" for tangible and intangible transformations. Tourism trend is one of the most reliable indicators.

Before the Games, despite the city's outstanding monuments, museums, baroque architecture, and cultural attractions, leisure/cultural tourism accounted for only 20% of its overall tourism figures (Bondonio, Guala, 2011). Improving tourism amenities and infrastructure was a key objective for Torino 2006. The extent to which this goal was achieved can be evaluated with reference to hotels, whose numbers increased from 287 in 2002 to 376 in 2006 (+31%). In 2013, arrivals in Turin and in the first belt were 1,549,298 while in 2022 the value grew further as evidenced by the presences which went from 3,907,282 in 2013 to 5,004,318 in 2023 (Osservatorio statistico della Regione Piemonte, 2023).

Mega events, if properly planned and managed taking into account the territorial context, therefore represent a tool for urban planning and economic implementation opportunities.

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Olimpiadi invernali e pianificazione spaziale: tra territorio locale e spazio regionale. – Nel corso della storia olimpica, l'edizione invernale ha subito trasformazioni significative nelle dimensioni spaziali, introducendo una nuova prospettiva critica sulla dimensione urbana. L'articolo analizza i diversi modelli spaziali delle Olimpiadi invernali attraverso indicatori statistici volti a un confronto quantitativo. Attraverso lo studio dei diversi modelli spaziali, verranno fornite nuove ipotesi sul rapporto tra le sedi olimpiche e il tessuto urbano, offrendo strumenti preziosi per valutare l'evento olimpico nell'area di riferimento. L'articolo esamina come la creazione di nuove strutture determinerà alcuni cambiamenti spaziali in grado di catalizzare nuovi impatti sulle connessioni interne della città e del territorio di riferimento.

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