

Rio de Janeiro 2016

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As one enters the viewing platform of the Olympic Park at Barra da Tijuca, a bold statement is displayed on the wall above the balcony: 'The Games must serve the city'. The statement is credited to former Barcelona Mayor Pasqual Maragall whose quote Eduardo Paes, mayor of Rio de Janeiro, borrowed from, eager to equate the urban interventions for the 2016 Games with the wide-ranging transformation witnessed in the Catalan capital more than two decades ago. It is claimed that Rio is undergoing a watershed moment with mega-events propelling it to global city status (Paes, 2015). Expectations are at such a level that when Paes was confronted by a recent study showing marginal benefits for cities hosting mega-events the answer was bold: 'We will leave Barcelona in the dust' (Fernandes, 2015).

Comparisons aside, it is useful to hold on to the mayor's promise to ask: how are the Games serving the city? What kind of transformations are being induced by the mega-event? For that, it is important to examine how the Olympic moment translates into changes and continuities of the developmental trajectory of Rio de Janeiro. The complexity of Rio's geography is often understood in binary terms: the hills and the 'asphalt'; the formal and the informal; the North and the South Ends. How does the preparation for the 2016 Games relate to these dichotomies?

This chapter offers an overview of Rio de Janeiro's past, current processes of change, and a preliminary discussion of the legacies that will be left by the event. The first part charts the history of urban change, events and mega-projects that have shaped the development of the city. The second examines the different Olympic bids the city has prepared in the last two decades followed by an analysis of the preparations and their impacts six years after the Olympic nomination. Finally, the conclusion attempts to answer the questions posed with one year still to go before the start of the Olympics.

From the belle époque to the era of mega-events

Francisco Pereira Passos is another political figure that Eduardo Paes is keen to be associated with¹. Mayor of Rio de Janeiro between 1902 and 1906 he is credited with the wholesale transformation of Rio's central area, a feat likened to that of Baron Haussmann's Great Works of Paris that served as its model (Benchimol, 1990). The city's densely populated *Centro*, experienced a frenetic and profound program of works with the ultimate goal of 'civilizing' and 'embellishing' the capital of the 'new Brazil', by then a young republic and the world's largest coffee producer, with the material and cultural traits of a modern and cosmopolitan city (Abreu, 2008). In material terms that meant overcoming the colonial character of the city with its narrow and dank roads that conferred the aspect of a large Portuguese village. Therefore, the program of works envisaged the modernization of the city port (actually undertaken by the federal government) vital for the country's economy and to keep up with regional competition from Buenos Aires and Montevideo; the opening up of new thoroughfares to regulate the traffic flow; and the upgrading of

the utilities infrastructure. Culturally, it oversaw the construction of a host of institutional buildings of eclectic European architecture, plazas and promenades, while repressing 'uncivilized customs' such as carnival celebrations, street hawking and stray dogs (Needell, 1987). Crowning such transformation was the construction of *Avenida Central* (now Avenida Rio Branco) a Paris-inspired boulevard with cafés and tea houses, an opera house, national library and other civic institutions. Coupled with a hygienist justification, Passos's bulldozing efforts saw the demolition of hundreds of tenement houses, home to many urban poor composed by freed slaves, migrants and immigrants, attracted by the proximity to labour opportunities. A consequence of this action was the displacement of thousands of poor residents to more distant neighbourhoods served by the railway or to precarious self-built homes on the hills near the city centre. The increasing formation of so-called 'favelas' by 1916 was such that a local magazine called for a 'rigorous censorship' of the 'parasitic neighbourhoods of the hills' that were 'wrecking with their sordid existence the efforts made to dot the capital of Brazil with the magnificent aspects of a great metropolis' (Revista da Semana in Abreu, 2008:89).



Figure 1. Avenida Central with its influence from mid-19th century Paris epitomised the urban interventions that marked Rio de Janeiro's *belle époque* (Acervo AGCRJ).

In the first quarter of the 20th century two vectors of urban development that socially and spatially stratified the city had matured (Abreu, 2008). One followed the coastline south of the centre led by the opening of tramways to the wealthy neighbourhoods of Glória and Botafogo, where the elite built their airy and large mansions, and well across the hills into Copacabana, Ipanema and Leblon, where urban Rio

found its beach identity (O'Donnell, 2013). The other vector followed north from Centro, along the rail lines departing from Central do Brasil station toward industrial and rural districts such as Engenho de Dentro and Deodoro, and into the Baixada Fluminense region. Rio was quickly evolving into a teeming metropolis reaching a population of more than one million in 1920 and more than doubling that figure after the World War II (Abreu, 2008).

The federal capital continued to be selectively transformed by grand projects. The levelling of Castelo Hill in 1922 was justified on the grounds of improving air circulation and hygiene while also opening a prime piece of land in the city centre by dislodging 'undesirables' (Kessel, 2001). Its urgency was due to the hosting of the International Exposition celebrating Brazil's centenary as an independent state with temporary pavilions erected on the cleared grounds. The earth removed served to enlarge by landfill the sea shore thus creating the neighbourhood of Urca and shrinking the size of Rodrigo de Freitas lagoon. By the mid-20th century Rio had become an exotic international destination with visits from Hollywood stars and serving as a movie set for the shooting of musicals (O'Donnell, 2013).

The increasing complexity of metropolitan Rio during the dictatorship period (1962-1984) was translated in a 'highway fever' (Abreu, 2008) that excused the construction of new roads, tunnels and fly-overs such as the Perimetral elevated expressway over the port area; the Aterro do Flamengo expressway facilitating the traffic flow between Centro and the South End; and the cross bay Rio-Niteroi bridge. However, these works were testimony to the beginning of the slow political and economic decline of the city with the construction of Brasilia as the new federal capital, which meant not only a loss of status but also the departure of important elements of the city economy. Amidst the global economic crisis, Brazil reached the 1980s with an unsustainable level of external debt and contracted growth. Structural adjustment programmes conditioned by the loans from multi-lateral institutions further increased levels of poverty and unemployment. Crime levels soared in Rio while organized armed groups started to take control of the favelas as base for their illicit activities. The Rio de Janeiro of the 'lost decades' of 1980s and 1990s still attracted world-wide attention. This time, rather than the scenes of international celebrities frolicking on the sands of Copacabana it was the execution of homeless children at Candelária and unarmed civilians at Vigário Geral that captured international headlines. Some of the business elite left the city afraid of the wave of kidnappings while companies transferred their activities to other cities. The urban space became increasingly fortified with the walls and surveillance cameras to secure residences, offices and commerce. The booming area of Barra da Tijuca, the new urban frontier for Rio's upper and middle classes, epitomized the increasing spatial segregation of the city with exclusive enclaves of gated communities, shopping malls and express ways. In retrospect, it is difficult to imagine that an Olympic candidature could emerge in such adverse conditions. However, it was precisely the seductive idea of an urban turnaround promoted by a former host city that would motivate the Rio Olympic project.

Serial bidding

From the mid-1990s Rio de Janeiro bid three times to host the Olympic Games and went to great lengths to host the 2007 Pan American Games as a way to boost its hosting credentials. The bidding for the mega-event took place at a time of the redefinition of urban politics and as an outcome of international policy exchange, appreciated for its strategic use to leverage urban development and to redefine the city image.

The process of Olympic bidding was thus influenced by two movements. One has its place in the City Hall in the redefinition of urban and planning policies where contact with the experience of Barcelona motivated the 2004 bid. The other has its place in the Brazilian Olympic Committee (BOC) where the ascendancy of a new chairman was intimately linked to the quest to bring the Olympics to Rio.

The 2004 Olympic bid and the Barcelona connection

The origin of Rio de Janeiro's Olympic project lies in the policy exchange that took place between the municipality and Barcelona during the 1990s (Silvestre, 2012). Fresh from hosting the 1992 Games that helped to 'put the city on the map' Barcelona's city hall undertook a series of initiatives to take advantage of the city's strengthened international profile (Borja, 1996). Among these was the offering of consultancy services in public management targeting Latin America as a key market (Associació Pla Estratègic Barcelona 2000, 1994). Promoted by the municipal department of international relations, Catalan policymakers and companies were soon advising local governments in areas such as traffic engineering, waste collection and water management. However, it would be in the assistance for the elaboration of strategic plans that a greater market was found and in Rio de Janeiro their most challenging project.

The 1992 municipal elections in Rio saw the victory of Cesar Maia, a former left-wing federal deputy who found space in the more conservative spectrum running for the Brazilian Democratic Movement Party (PMDB). Maia was keen to develop his image as conciliation between the technocrat and the politician, forming a cabinet of specialists and looking for new methods to bring efficiency to public management (Novais, 2010). Interested in the concept of strategic planning he was advised by his secretary of urbanism Luiz Paulo Conde, an architecture scholar with professional links with Barcelona, to listen to the proposal of the Catalan policymakers who were subsequently hired. According to the consultancy brief, the goal of the strategic plan was to

set a vision for Rio de Janeiro – a competitive city integrated to international life – where it is assured for its population the full exercise of their citizenship. This vision will include a range of macro-economic, social, urban, cultural and environmental infrastructure projects that will define the development of the city in the next decade. The strategic plan will define a frame able to integrate all these macro-projects in a coherent manner (PCRJ, 1993:4)

Elaborated between 1993 and 1995 the plan set a central objective² underpinned by strategies, objectives and activities to be implemented by policies and projects. A key element of the strategic plan was the bid to host the 2004 Olympic Games by virtue of establishing 'projects with fixed deadlines and effects on its image at home and abroad, to become a center of regional, national and international attraction' (PCRJ, 1996:25). The idea was born out of the exchange between Rio political leaders and the Catalan consultants, who extolled the experience of the 1992 Games in leveraging funding to development projects and in city marketing. A new team of consultants was formed bringing the expertise of the planners of the 1992 Games headed by architect Lluís Millet, responsible for the master plan and infrastructural projects of the Barcelona Olympics. Working frantically during the second half of 1995, Millet proposed to adapt the underlying principle of territorial balance that informed his plan for the Barcelona Games by distributing Olympic clusters in the four quadrants of the city: North, South, West and Barra. The urban interventions in each cluster were expected to stimulate trickle-down effects in the surrounding areas and thus encompass most of the city's urban space (RBC, 1996). The centerpiece of his proposal was the Olympic Park cluster in the Fundão Island located in the city's North End, home to the

Federal University of Rio de Janeiro. The university campus offered the advantages of being located next to the international airport and important expressways, while facilitating security and having abundant vacant land for the construction of Olympic facilities. It was proposed to change the isolated character of the island into an 'area of new centrality' by 'opening' it up to the city with the construction of a science park, private housing, convention centre and a new linear park on over five kilometers of seafront (Rio Bid Committee, 1996:24).

Millet's proposal divided opinions among the members of the bidding committee. On one side was Conde and representatives of the federal government, who were supportive of the plan. On the other was Maia and Carlos Nuzman, president of BOC, advocating the use of Barra as main stage for the Games. In the end, Millet's proposal prevailed and the bid book was submitted to the IOC. The official candidature of Rio captured public imagination attracting one million people to Copacabana beach in support of the bid on the eve of IOC's announcement of the cities shortlisted to the second and final phase (Montenegro and Bahiense, 1997). Their hopes ended prematurely as Rio was left out of the final round of voting that included Athens, Buenos Aires, Cape Town, Rome and Stockholm.

The 2012 Olympic bid and the hosting of the 2007 Pan American Games

In the aftermath of the IOC shortlist decision newspapers searched for the reasons to blame for the failure of the 2004 bid. It included the inexperience of the bid committee; the weak promotional strategy; the feasibility of the cleaning program for the Guanabara Bay that surrounded Fundão Island; the undeveloped transport and telecommunications infrastructure of the city; and the strong political character of the bid (Anon, 1997; Ventura and Araújo, 1997). Political motivation was understood to have jeopardized the governance of the bid and the nature of the proposed urban interventions. Federal government actors took control of the candidature and sidelined the mayor and the BOC's president. The absence of the mayor during the visit of the IOC Evaluation Commission and the marginal role of BOC did not help to boost Rio's chances. Nuzman expressed complaints about BOC being 'underused' arguing that '[t]here is a great rejection when the [national Olympic] committee is not the one leading the way, when there is a political emphasis in the candidature' (Varsano and Bittencourt, 1997). Finally, the discourse of using the event to improve the material conditions of deprived areas around Fundão Olympic Park was seen as more politically motivated than realistic to the city's chances to convince IOC members. For Maia:

submitting a city for the Olympics means taking the best features of the municipality and offering them to the International Olympic Committee (...) Rio decided to insist on the idea of an Olympics for the city, hoping that the Games would serve to promote urban and social reforms. It is an appealing strategy but also very risky (Ventura and Araújo, 1997:C6).

A subsequent bid for the 2008 Games was speculated about but never progressed. Instead Nuzman and Maia assumed the Olympic project and completely redesigned the general proposals. According to Nuzman '[t]he Rio 2004 debacle served to define a new strategy' (Anon, 2002) centred on two key foundations. First was to move the centre of the Olympic master plan to booming Barra da Tijuca.

The choice of Barra is very important. During the Olympic candidature for 2004, Mayor Cesar Maia and I were against the choice of Fundão. The preference for Barra is due to the more available space... At Barra it is possible to build 70% to 80% of the Olympic facilities. The mayor Cesar Maia had the vision in thinking of Barra and in areas such as the racetrack near Riocentro. There is space

to build a permanent sports park. I believe the racetrack is underused. The Formula 1 is now in São Paulo. Brazil has other important racetracks in Paraná, Goiás and Brasília. So, Brazil does not have enough auto and motorcycle racing competitions to justify this. This racetrack could give way to a great Olympic city. I have already explained this to the mayor. It rests on the city to decide (Nuzman, 2002).

The decision for Barra was also pragmatically defended by Maia:

Barra represents the idea of one single signature. All it takes is one signature from the mayor to define everything. In Fundão decisions depend on the president, the education minister, the chancellor, the dean, the mayor... (Ventura and Araújo, 1997:C6)

Secondly, it was understood that the city had to prove itself in organizing other events before preparing another Olympic bid. Following the advice of IOC president Juan Antonio Samaranch attention was set on the regional Pan American Games, to which a bid was launched and awarded in 2002 (Anon, 2000). As championed by Nuzman the new sports venues were to be located at the Jacarepaguá racetrack where a nearby gated development project would serve as accommodation for athletes. Soon after the Pan American Sports Organization (PASO) awarded the Pan American Games to Rio, the city announced a new Olympic bid for the 2012 Games. The Pan American Games would thus serve as a two-step strategy with the planned venues reappraised to conform to the IOC requirements. The construction of an Olympic stadium was announced on rail yards in the northern neighbourhood of Engenho de Dentro along with rescaled projects for an aquatics centre, velodrome and sports arena at Barra.

At this stage Luis Inácio Lula da Silva, from the opposition Workers' Party (PT), was elected president of Brazil. A dedicated Ministry of Sports was established and the president fully endorsed the new bid. However, Rio's Olympic ambitions were cut short once again in the application phase as the candidature did not achieve a sufficient score in the technical evaluation, particularly in the items of transport, accommodation, safety and security (IOC, 2004). Despite the setback, the federal government was confident that 'with the Pan 2007 Rio would demonstrate unequivocal proof of its ability to organize a great international event' (Souza, 2004). Indeed support from the federal government proved to be more than a symbolic gesture as the soaring costs of the preparation for the Pan American Games were compromising the municipality's budget. Plans to improve and extend the public transport network were discarded and the project became essentially venue-oriented while running out of time. Rescued by federal aid the preparations were completed just in time for the start of the event to which the general public responded well with good attendance to the competitions while being praised by the IOC. The retooled Olympic strategy started to bear fruits giving confidence to its promoters to move to their next objective.

Winning the 2016 Olympic bid

A few weeks after hosting the 2007 Pan American Games, an official bid application was submitted to the IOC. The planning concept considered the master plan of the Pan American Games as a base line to further develop the Jacarepaguá racetrack with new facilities that would in effect bring the motorsport activities to an end. A compact Games with all competitions held in the city and with most venues located at Barra was one of the strongest planning selling points of the candidature.

Parallel to these initial steps the city hall was going through the decennial review discussions of its statutory master plan, the *Plano Diretor*. A significant outcome of this process was the definition of macro zones to inform urban development policies. Accordingly, Rio's territory was divided into four macro zones that roughly matched the city's informal categorical areas: the South End where development should be controlled due to the compactness and maturity of its built up area; the West End where there was a growth of deprived neighbourhoods which should be assisted; the North End which was longer established and yet had great levels of deprivation and where development should be encouraged; and finally the Barra region whose real estate speculation should be conditioned by public and private investments in infrastructure (PCRJ, 2011).

When juxtaposed the Olympic master plan and the city statutory master plan were in conflict. Barra was the preferential destination of investments in infrastructure while the Deodoro region in the West End would be the secondary Olympic cluster and existing stadia were to be used in the North End. An initial animosity took place between the city planning department and the technical team of the bid committee. This was reconciled by reviewing the location of some venues, albeit these were rather modest such as the use of the Sambadrome for the archery competition or the sponsor's village at the port area. Nevertheless, the Olympic bid offered a window of opportunity for pending works and projects developed by the municipality's planning and transport staff such as rainwater reservoirs for flood control and the implementation of a network of Bus Rapid Transit (BRT) corridors. The final Olympic master plan proposed in the bid book was not as compact and less reliant on large-scale works as its promoters would have liked but rather than compromising the city's chances, the foreign consultants advising the candidature saw the mediation between the needs of the mega-events and public policies as an appealing sales pitch.

The role of external consultants during the candidature was an important one (see Oliveira, 2015). Since the Pan American Games experts involved with the Sydney 2000 Games had been advising the planning and organization of the sports events. In these years, the gap between candidate cities to satisfy standard requirements for the Olympic Games became narrower while marketing and communications played an increasing role (Payne, 2009). The Rio de Janeiro candidature spared no expenses in hiring some of the most sought-after marketing and public relations consultants of the mega-event industry. Consultants fresh from the winning London 2102 bid such as communications director Mike Lee, and former IOC insiders such as former secretary general Françoise Zweifel and previous marketing director Michael Payne crafted the bid with a 'clear vision for the Olympic Movement' (Payne, 2009).

Finally, the Rio bid was set against a favourable political and economic context in contrast with the 2004 candidature. The bid was fully supported by the three levels of government and the international presence and reputation of President Lula contributed to the promotion of the bid. In the second half of the 2000s the Brazilian economy was experiencing high rates of growth and the discovery of a large oil basin off Rio de Janeiro's coast further boosted confidence in the candidature. Brazil was already selected as host of the FIFA 2014 World Cup but this did not seem to affect Rio's chances as international bookmakers pointed to Rio as a likely contender on the eve of IOC's meeting in Denmark. The momentum was highly favourable and press coverage positive, as argued by strategic adviser Michael Payne (2009), noting that 'by the time the IOC was turning to Copenhagen, the world's press were running headlines 'The Rise and Rise of Brazil: Faster, Stronger, Higher'. The hosting rights awarded to Rio on 2 October 2009 opened a seven-year period of preparatory works which would intensely impact upon the lives of the 'cariocas' (as residents of Rio are known).

Producing the Olympic city

The preparations for the 2016 Olympic Games are taking place in a particular context for Rio de Janeiro which overlaps and intersects with other unfolding processes. As noted earlier, the award was parallel to economic growth which in combination with fiscal and distribution policies stimulated employment and consumption levels. Locally, Rio was impacted by the growth of the oil and gas industry with the installation of new national and foreign companies. It is also important to note the security policy implemented by the state of Rio which has ended the presence of armed groups at some favelas. Finally, the city also played a key role in the hosting of the 2014 World Cup with seven matches including the final played at Maracanã stadium. Altogether these processes help to explain the hike in local prices, especially in real estate where house prices increased by 227% between January 2010 and May 2015 making Rio the most expensive city in the country (Fipe Zap, 2015). In the sections below analysis is turned to those items more directly attributed to the 2016 event and where urban, social and environmental impacts have been most noticeable.

Master plan and Olympic venues

The Olympic master plan presents the organization of competitions in four cluster areas around the city (figure 2) which suggests a balanced distribution between the North, South, West and Barra regions. However, the concentration of competitions and the extent of urban interventions vary considerably among them. In the Copacabana zone, where the main tourist district is located, interventions will have a minimal impact. The outdoor competitions of rowing, beach volleyball and triathlon will use existing and temporary facilities having the city's famed beaches and mountains as a backdrop. Another zone encompasses the stadia of Maracanã, recently revamped for the 2014 FIFA World Cup, and the Olympic Stadium at Engenho de Dentro, built for the 2007 Pan American Games. A novel feature in the history of the Olympics will be the organization of the opening and closing ceremonies at a different stadium than where the athletics track and field competitions will be held. In reality it is in the zones of Deodoro and Barra that substantial processes of urban change have been triggered.

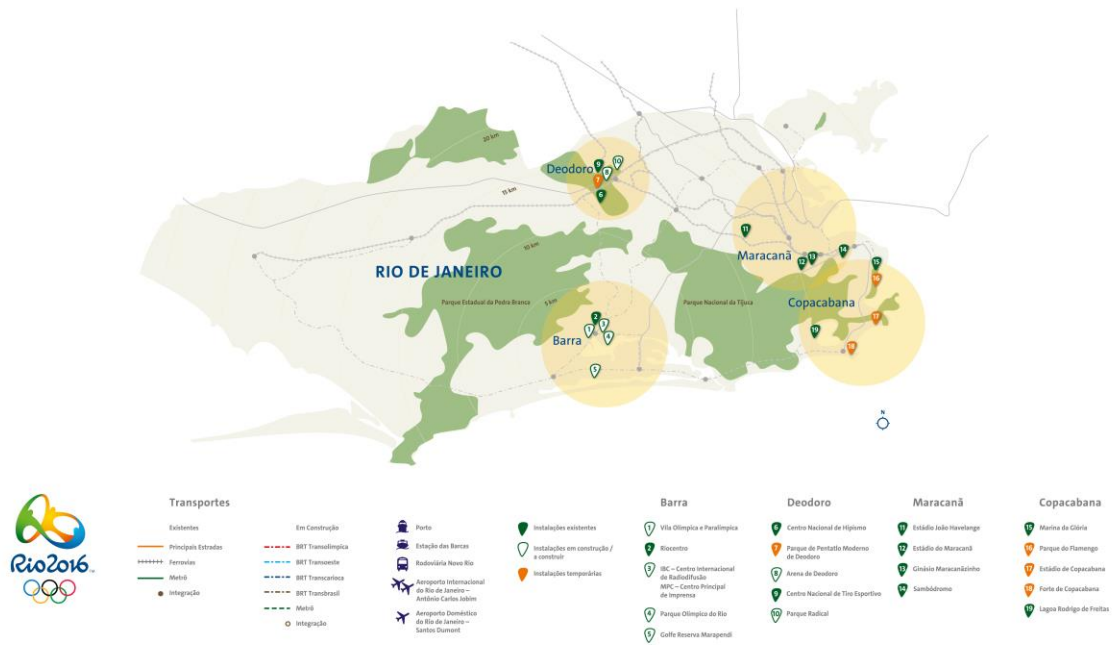


Figure 2. The Olympic clusters of the Rio 2016 Games (Rio de Janeiro City Council).

Deodoro, in the city's West End, presents the case of an isolated site where interventions are essentially ad hoc. In fact, the Olympic facilities will be located within *Vila Militar*, a planned community of the Brazilian Army. Military facilities will be used for the shooting and equestrian competitions while training grounds will give way to the hockey and rugby arenas. These facilities are mostly existing and temporary and will not produce major changes in the area. In contrast, land belonging to the Brazilian Army will be transformed into the X-Park, where a new parkland dedicated to the practice of extreme sports is planned. The site will make use of the BMX tracks and the canoe slalom facility built for the Games. It has been tipped that it will become the city's second largest park and help to 'reinforce local youngsters' prospects for social and sporting development' (PCRJ, 2015:44). New transport links will improve access to other parts of the city although it is yet to be known the impact caused by the new flyovers and expressways running through the neighbouring area of Magalhães Bastos (Davies, 2014).

On the other hand, the Barra zone will be the centrepiece of the Games where 16 competitions will be held. As argued earlier, it is an area of strong real estate speculation and where post event plans have been most clearly defined. The Olympic Park is being developed on the former site of a Formula 1 circuit in a peninsula on the Jacarepaguá lagoon. It will house nine sports arenas which will stage the competitions of gymnastics, swimming, cycling, tennis, basketball, handball, fencing, wrestling and taekwondo, apart from the broadcasting and media centres. The avoidance of expensive and unused venues has been a constant presence in the public discourse and provisions have been accommodated to guarantee the post-event use of the arenas. The most interesting cases are those of the handball arena and the aquatics centre, both temporary facilities developed with consideration for their after use. The venues will be disassembled after the event and reassembled as public schools and public swimming pools.

The Olympic Park is being developed via a public-private partnership where a consortium of developers is responsible for the delivery of part of the venues and related infrastructure. After the event 75% of the land of the Olympic Park will be transferred to developers to give way to private housing, office towers, hotels and shopping malls. The remaining 25% is where the permanent facilities will be located, to be transformed after the Games into an Olympic Training Centre run by the BOC for the use of elite athletes (figure 3). It is still unclear how the centre will be funded and managed and given the underuse and poor maintenance of the venues built for the 2007 Pan American Games concerns are justified (Guerra, 2015).



Figure 3. Master Plans of the Olympic Park for the Games and for the post-event phase (Rio de Janeiro City Council)

As a result of being the main Olympic cluster, Barra is the focus of much of the public policies and private investment. Reviewed planning restrictions have allowed the construction of taller Olympic-related housing and hotels. In the post-event scenario access to the region will be significantly improved with extended metro lines, duplicated highways and the new BRT corridors linking Barra to the city centre and the international airport.

Governance and budget

The bidding campaign emphasized the alliance and full support of the three levels of government and the sizeable funding earmarked for the delivery of the Games. The election of Eduardo Paes as mayor in 2008 reproduced at the local scale the political alliance between his party, the PMDB, and PT found at the federal and state government levels. This was portrayed as an unprecedented alignment capable of overcoming usual personal and party feuds and bureaucratic barriers. While indeed it seemed to facilitate the speeding up of some projects (such as the waterfront regeneration discussed below) the definition of the governance structure for the delivery of the Games was contested and slow to be resolved.

Initially it was proposed to create a body along the lines of the Olympic Delivery Authority responsible for the London 2012 Games. The Olympic Public Authority (APO) would be a public consortium formed by the federal, state and municipal governments with centralized powers to deliver the infrastructure and services necessary for the organization of the event (the non-OCOG attributes). However, institutional conflict over responsibilities and legal obstacles to ensure complete powers weakened the remit of APO. While the approval of the institution at the federal level was delayed, the municipality decided to create its own delivery authority, the Municipal Olympic Company (EOM). In this dual institutional arrangement both bodies are nominally credited with delivering the Games. In practice, EOM operates as the main delivery body, especially after projects under the responsibility of the federal and the state governments were devolved to the municipality, such as the Olympic Park and the Deodoro sports complex. In the end Mayor Paes efforts to be the poster child of the event prevailed while APO has the role of reporting on the federal government activities and the consolidated budget.

Rio's candidature for the Games anticipated in 2008 that it would cost a total of USD 14.42 billion split between the OCOG's budget for staging the Games (USD 2.82 billion) and the non-OCOG budget for delivering the related infrastructure and services (USD 11.6 billion) (Rio 2016 Bid Committee, 2009b). This was the highest budget of all candidate cities but promotional material stressed Brazil's positioning during the global financial crisis as a 'small island in an ocean of negative economic results' (Ministério do Esporte, 2009:100). Strong emphasis was put on the earmarked national infrastructural budget of USD 240 billion from which the Games would draw (Rio 2016 Bid Committee, 2009a:35).

The total costs updated one year prior to the start of the event amount to an increase of 34% of the original budget, excluding service expenditures such as security, educational programs and fan zones (APO, 2015a; 2015b). Mayor Paes explained that the total costs could in fact only be possible to be known after the staging of the event (Dolzan, 2015). It was decided to further split the non-OCOG budget in two categories. The Responsibility Matrix lists all the structural projects directly related to the Games under the remit of each government level. This includes the construction and reform of venues, temporary installations, infrastructure and equipment. The second category is the Public Policies Plan, also referred to as the Legacy Plan, which includes expenditure on mobility, urban regeneration and environmental

programs understood to have been fast tracked as a result of hosting of the event. This separate category is aimed at giving more evidence to projects to be considered as legacies of the event (Table 1).

Table 1. Rio 2016 budget estimates (BRL million)

Expenditures	Estimates 2015	Source of Funding
OCOG budget	7,400	Self-financed
Responsibility Matrix	6,608	
Olympic Village	2,909.5	Private
Olympic Park (ppp)	1,678.0	PPP
Olympic Park (public)	730.1	Federal and municipal
Deodoro sports complex	832.4	Federal
Sambodromo	65.0	Private and Municipal
Golf course	60.0	PPP
Marina da Gloria	60.0	Private
Olympic stadium	52.3	Municipal
Athlete's park	40.3	Municipal
Power/Electricity Infrastructure	180.4	Federal
Legacy Plan	24,106	
Metro Line 4	8,791	State
Porto Maravilha	8,200	PPP
BRT	2,373	Municipal
Environmental programs	1,628	State, municipal and private
Light railway	1,189	Federal and private
Roads	974	Municipal
Urban renewal	695	Federal and municipal
Guanabara Bay cleaning program	114	State
Doping control laboratory	110	Federal
Social programs	31	Federal
Total	38,114	

Source: Olympic Public Authority, 2015a; 2015b.

Obs.: The announced budget has yet to confirm expenditures in security and other services while some projects in the responsibility matrix and legacy plan – such as the reform of train stations, the Maracanazinho arena and the rowing stadium – are awaiting definition.

Olympic promoters refute criticism against the Olympic budget by citing statistics of the participation of the private sector. Accordingly, some 60% of the costs are covered by private funding (APO, 2015a; 2015b). These are largely represented by the construction of the Olympic Village, the new golf course and the public-private partnerships behind the construction of the Olympic Park and the regeneration program of the port area. Despite being touted as enterprises ‘where there is not a single cent from the public purse’ (Brito, 2014) interest from developers was only possible with the alteration of planning restrictions and the transfer of land ownership. In all cases floor-area ratios were changed to allow taller buildings to be erected. At the Olympic Park where land ownership of the previous racetrack belonged to the municipality, 78% will be transferred to the private partner to explore commercial activities including private housing, hotels and shopping malls. The compensation and relocation of the evicted families living next to the Park in Vila Autódromo and the construction of a new racetrack at a protected green field site in Deodoro are both actually existing costs resulting from the destruction of the Jacarepaguá racetrack.

However, they are not included in the Olympic budget and stand as reminders of the need for close scrutiny and inclusion of the social and environmental costs.



Figure 4. Aerial view of the Olympic Park as of May 2015. Vila Autódromo can be seen in the bottom right (Renato Sette Camara / Rio de Janeiro City Council).

Security and safety

IOC evaluations of Rio's Olympic candidatures all noted security and safety as problematic and the city consistently achieved low scores in relation to other bidding cities (IOC, 1997; 2004; 2008). Responses have invariably made reference to the absence of terrorist activities in the country and to the fact that the hosting of the UN Earth Summit in 1992 occurred with no incidents (Rio 2016 bid committee, 2009) – when a tight security operation was carried out epitomized by the presence of tanks on the streets of Rio. More recently, an extensive security program has been introduced, which despite not being designed in response to the hosting of mega-events has become closely implicated with it.

Starting in December 2008 the Pacifying Police Unit (UPP) program has sought to take territorial control of favelas from organized criminal groups with the installation of police stations and implementing community policing and public infrastructure (Freeman, 2014). Prior announcement of an intervention seeks to influence drug gangs to leave the area thus avoiding armed conflicts with the arrival of the elite police forces. By the summer of 2015 some 40 favelas had been targeted and a sensible reduction of violent crimes occurred in the first four years of the program (Cano, Borges and Ribeiro, 2012).

However, as Cano et al (2012) have noted the selection of favelas was not supported by indicators such as crime statistics. Rather, it was highly suggestive of forming a 'security belt' around the Maracanã stadium and near other Olympic and tourists sites, thus 'ignoring the most violent areas of the metropolitan region, which are the Baixada Fluminense and the North End of Rio' (p.194). Policemen have also confirmed in interviews that the hosting of the World Cup and the Olympics were determinants in guiding decisions over the expansion of UPP operations (Vigna, 2013; Negreiros, 2014). Recent escalating violence and police abuse at some of the 'pacified favelas' has made residents doubtful of the longevity of the program after the event (Puff, 2013; 2014).

Responsibility for security during the Games will be shared between the organizing committee, the federal Extraordinary Secretariat of Security for Major Events, and the Ministry of Defense. While the former two will coordinate operations at the venues and in the city supplemented with private security (Werneck and Maltchik, 2015), the latter is responsible for equipping the territory against potential threats. The defense strategy includes the hiring of fighter aircrafts from the Swedish government and missile systems from Russia (Batista, 2015; Anon, 2015a).

Mobility

Rio's growth has always been dictated by overcoming its challenging landscape and the expansion of the transport network played a vital part in pushing the city limits. As noted earlier, just as electric tramways opened the seafront of the South End for the carioca elite, working class neighbourhoods were established along the railways cutting through the North End and the Baixada Fluminense region. In the 1970s the marshlands of Barra da Tijuca represented a new frontier after the gradual development of Copacabana, Ipanema, Leblon and São Conrado. Consistent with the planning rationale developed for Brasilia, planner Lucio Costa devised the organization of new neighbourhoods along expressways and the primacy of the individual motor vehicle.

Between 1991 and 2010 the population residing in the Barra region grew from 526,302 to 909,955 (IPP, 2001). Encircled by mountain chains, access to the rest of the city was possible via the coastline and through the valley north of Jacarepaguá but by the 1990s traffic flow was already saturated. Having Barra as the main stage of the Games suggested that improved access to the area and transportation was another theme in which the city trailed behind other bids. The 2016 bid promised the creation of a 'High Performance Transport Ring' and introduced the concept of the BRT system as a feasible way to connect the four Olympic clusters and deliver a new transport network in time for the event (Rio 2016 OCOG, 2009).

Barra acts as the nodal point of the three segregated bus corridors tied to the Olympic deadline. Totalling 117 kilometres they consist of the Transoeste corridor linking Barra to the West End and a new metro terminal; the Transcarioca line, which cuts through the North End towards the international airport; and the Transolimpica, linking the Olympic Park with Deodoro.

Proponents of the BRT system, such as former Bogotá mayor Enrique Peñalosa who became a global advocate of the policy, argue that it represents the only viable transport solution in terms of scale and cost for large cities in the Global South (Peñalosa, 2013). It is presented as a compromise between the lower costs of surface systems and the operation and comfort of underground. Critics on the other hand,

point to the marginalization of metro and rail expansion and that the system presents only temporary results as it can saturate quickly. The experience of the Transoeste and Transcarioca corridors already in operation seem to corroborate the latter argument. Press coverage of the systems inaugurated in 2012 and 2014 respectively document overcrowding and safety worries as routine occurrences (Victor and Ribeiro, 2015; França, 2015).



Figure 5. The new BRT system of segregated bus lanes were devised to connect the Olympic clusters and the international airport and stand as the transport legacy of the 2016 Games (Renato Sette Camara / Rio de Janeiro City Council).

The Olympic Transport Ring also envisioned expanded metro lines and upgraded rail services. The construction of the metro line 4 is the most expensive project associated with the Games consuming 23% of the total budget at a 2015 updated cost of BRL 8,8 billion (APO, 2015). It will extend the service running along the South End coastline for 16 kilometres with six new stations reaching Barra da Tijuca at its eastern point in substitution to a previously planned BRT corridor (Rio 2016 OCOG, 2009). Finally, it was also emphasized that the rail system would be completely renovated in order to deliver a ‘world-class’ service to the densely populated areas in the North and West regions (Rio 2016 Olympic Bidding Committee, 2009). After reaching a peak of 1 million day riders at the beginning of the 1980s the service currently carries around 620,000 passengers every day with frequent problems of disrupted services and overcrowding (Supervla, 2015; Souza, 2014). Olympic-related investments promised to ‘drastically focus on changing both the image and the effectiveness of the railway, upgrading stations, fully modernizing the rolling stock, upgrading infrastructure and systems, and improving maintenance works’ (Rio 2016 OCOG, 2009:26).

However, only the refurbishment of six rail stations serving Olympic venues were included in the ‘Legacy Plan’ with the remaining of the upgrading works under the responsibility of the private operator. A recent change in the terms of the contract transferred the refurbishment of the stations to the private operator

and a consequential reduction in the number of carriages to be purchased (Nogueira, 2015). The reviewed agreement evidences the marginalization of improvements in the areas of highest demand for public transports. The new BRT corridors and the expanded metro network will significantly improve transport connections in the region of Barra but substantially improved services for the commuters based in the North and Baixada Fluminense areas – the latter responsible for a ridership of 2 million passengers daily to Rio (Observatório Sebrae, 2013)– will have to wait for the time being.

Environment

The greatest gamble of Rio's Olympic-dependent program of interventions was the cleaning-up of the waters of Guanabara Bay in order to offer optimal conditions for the sailing competitions. Water pollution has grown exponentially since the 1960s due to industrial activity and the discharge of raw sewage from the 16 municipalities of the Rio de Janeiro Metropolitan Region on the shores of the bay. The Olympic bid set out the objective to treat 80% of the sewage by 2016 but recent figures suggest a more modest outcome.

A state-led sanitation plan has been in place since 1995 but it has been marred by the lack of coordination among stakeholders and funding discontinuities, and by 2007 it presented a level of 12% of treated sewage (Werneck, 2012; Rio 2016 OCOG, 2014; Neves, 2015). Thus the hosting of the Games presented the opportunity to leverage funding and efforts to accelerate the sanitation policy and improve environmental conditions for the population of 8,5 million. Despite showing progress leading to the treatment of 50% of sewage in 2013 (Rio 2016 OCOG, 2014), in the selection of public policies for the 'Legacy Plan' a modest set of programs totalling BRL 124.67 million – 0.3% of the total budget – was included (Konchinski, 2014b). They related to sewerage works in the central Rio area, river barriers and collecting barges. The latter two are mitigation efforts to avoid floating garbage near the competition areas while post-event targets remain uncertain.

Reviewed targets also compromised the reforestation pledge to compensate for carbon emission resulting from works for the Games. After expanding the original plan of planting 24 million trees to a further 10 million, a readjusted figure of merely 8.1 million was announced (Konchinski, 2015). The figure contrasts with the deforestation of 270 square meters of Atlantic rainforest for the construction of the Transolímpica corridor and the duplication of the Joá elevated express way (Konchinski, 2014a).

Finally, the construction of the Olympic golf course has also been responsible for the loss of natural environment. The sport, alongside rugby, was included in the Games by the IOC after candidate cities had concluded their final proposals. The Rio de Janeiro Olympic golf course will be located on the shores of the Marapendi Lagoon in Barra in an area previously protected as a natural site. Alleging financial and logistics reasons for not using the two existing private golf clubs, the municipality partnered with the private developer owning land north of the preservation area to build a course from scratch (PCRJ, 2015). According to the terms of the PPP the developer is responsible for the construction and maintenance costs of the venue. In return the municipality reviewed planning restrictions to allow taller luxury buildings to be built on the private land. After the event the venue will be operated as a public golf course for a period of 20 years before returning to the private owner (PCRJ, 2015).

Urban regeneration

The largest regeneration project linked with the Olympics is located 30km away from the Olympic Park right at the port area next to the city centre. The *Porto Maravilha* program aims to regenerate 5 million square meters of docklands, rail yards and warehouses into a new mixed-use neighbourhood. Signature buildings by some of the stars of the architecture system such as Santiago Calatrava and Norman Foster are profoundly changing the waterfront landscape with office towers, residential condos, museums, an aquarium and a renewed public space. Despite not featuring any prominent Olympic facility the program is being heralded as the main legacy of the Games.

The inadequacies of the port to adapt to the new container technology since the 1960s and the construction of the new Port of Itaguaí in 1982 led to the decline of activities and to the dereliction of buildings. Plans for urban renewal have come in succession but were barred by conflicting public interests, institutional resistance on the part of the port authority, and insufficient demand from private investors. The announcement of the program came shortly before the award in Copenhagen in a press conference with Rio's mayor, the governor and the Brazilian president. It signalled that joint intergovernmental efforts would finally make the policy happen.

Where previous plans failed to progress from the study phase or producing minor interventions, the announcement of *Porto Maravilha* took place in very favourable circumstances³. First, political alignments facilitated negotiations and in this case the release of land belonging to the three levels of government. Second, the strong growth of the Brazilian economy in the latter half of the 2000s, and of Rio in particular, created a strong demand for office space. The growth of the oil and gas industry with the discovery of new deep-sea basins was an important factor pushing corporate demand for new office space in Rio. Third, new planning instruments regulated in 2001 enabled the implementation of self-financed regeneration schemes. The Urban Operations instrument foresees public capture of planning gain by selling additional building rights to erect taller buildings to developers and the money re-invested in the regeneration of the area. Fourth, was the interest and lobbying of four of the largest Brazilian construction companies which produced the feasibility plan for the regeneration program and won the bid for engineering works and provision of services. Finally, was the momentum given by the hosting of the incoming mega-events, which further enhanced Rio's visibility and pushed for the fast-tracked approval of by-laws and planning permissions.

Despite presenting conditions to be developed independently of the Olympic project the association with the Games is strategic in a number of ways. In aligning the project with the Olympic deadline it reassures investors about the completion of infrastructural works. Since launch it has resulted in the demolition of an elevated express way and its substitution by an underground tunnel, the upgrading of electricity, sanitation and telecommunications structures, new roads and renewed sidewalks and urban furniture. It also enabled the municipality to leverage federal funding to implement a new light railway system. Finally, the scale of the project, the confidence in the market demands and the private financial resources of the PPP supported the discourse of a profound urban change. Its inclusion in the Legacy Plan, considerably boosts the legacy itself and the share of private funding.

The program has the potential to contribute positively to the regeneration of a central and historical area, opening up new public spaces and cultural facilities while attracting new businesses. However, there is

the danger for it to become a corporate ghetto and to induce the gentrification of nearby neighbourhoods, some of the few low-income areas close enough to the *Centro* job market. So far most of the announced developments have consisted of office towers and corporate hotels. The valorisation of land is a consequence of regeneration schemes, and more so in property-led projects such as *Porto Maravilha*. Social impacts can be mitigated by public policies and there is an attempt to moderate such outcomes in the City Statute by requesting local government to address the economic and social needs of residents impacted directly by Urban Operations. In this sense there was an expectation of new social housing to be included in the program, especially because all the building rights were bought by the Federal Savings Bank, a state institution that is also responsible for financing social housing in the country. However, only a limited number of restored houses have been converted into social housing. Residential development for the middle class has also been slow to be announced raising doubts about the ability to avoid the empty streets in out-of-office hours seen in the Rio's central business district.

Social impacts

The history of urban change in Rio have invariably produced substantial costs to the city poor. As saw earlier during the Pereira Passos reforms, tenement houses were targeted by the urban interventions leading to the displacement of residents to nearby hills and substandard housing along the railway. Another period of intense displacement took place in the 1960s during Carlos Lacerda's term of office. His pledge for ordering the urban space also translated in the wholesale removal of favelas in the South End with families relocated to social housing projects such as *Cidade de Deus* in the then distant region of Barra (Silva, 2004). During the military dictatorship, Negrão de Lima slum clearance program affected more than 70,500 people (Valladares in Brum, 2012). This troublesome historical legacy is once again repeated with the hosting of the 2016 Games contributing to the displacement of residents of favelas and low-income neighbourhoods.

Social impacts associated with the hosting of major events are extensive and well documented (Ritchie and Hall, 1999; Lenskyj, 2002; 2008; Silvestre, 2008; Haynes and Horn, 2011; Minnaert, 2012) with the displacement of residents representing the most dramatic impact (Olds, 1998; COHRE, 2007; Porter et al, 2009; Rolnik, 2009). The preparations for the Rio 2016 Games have accumulated a problematic track record in this respect as parts of, or entire, favelas are removed to give way to the works associated with the event. Faulhaber and Azevedo (2015) examined all the removal and expropriation decrees during Paes government between 2009 and 2012 reaching a figure of 20,229 affected households and an estimate of more than 65,000 people. The reasons for displacement included works for the Olympic Park; the BRT corridors; works carried by the secretariat of housing and other secretariats; and those considered at risk. The figure places Eduardo Paes' mandate among the ones responsible for the largest number of evictions in absolute terms, second only to the aforementioned Negrão de Lima.



Figure 6. The favela of Vila do Recreio II was cleared to give way to a BRT corridor. The houses in the background belong to the few residents still resisting eviction in May 2011 (Nelma Gusmão de Oliveira).

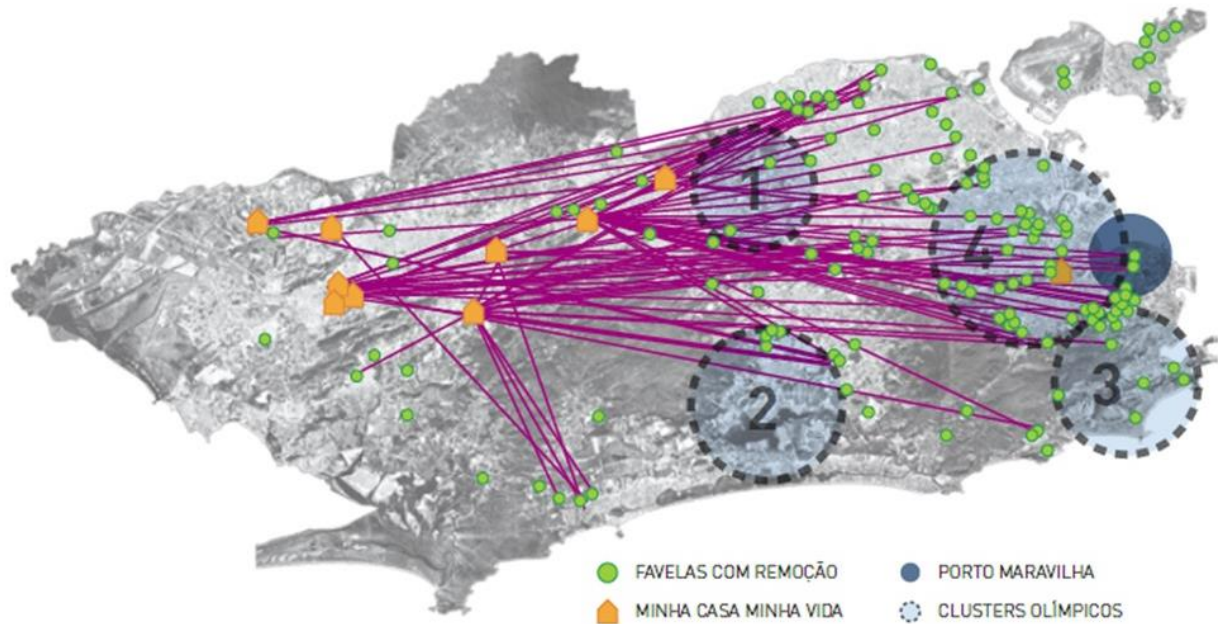


Figure 7. The map presents the location of favelas expropriated between 2009 and 2013 (in circles) and the destination of those accepting relocation to the Minha Casa Minha Vida social housing program, largely concentrated in the West End (Lucas Faulhaber).

The case of removal is even more dramatic when the experience of those affected is exposed. Silvestre and Oliveira (2012) documented the initial cases of displacement caused by works for Transoeste along Americas Av. in Barra Region which became standard practice for other removals. After an area is declared for 'public utility' and a list of properties is published, city officials promptly visit a favela to inform residents of their eviction and to earmark houses for demolition. Residents are oriented to either accept financial compensation, which only take the built structure into account, or to be relocated to the housing projects of *Minha Casa Minha* mostly situated in the city's western edge (figure 6), otherwise they risk being left empty-handed. Compensation is often insufficient to acquire a similar dwelling, even at local favelas, and the move to distant social housing brings financial and social hardship due to added commuting costs and the abrupt rupture of the social fabric. Those who accept the municipality's offers have their houses immediately cleared leaving remaining residents to live among rubble and litter. Delay to compensate or relocate has exposed families to vulnerable situations, having to live with family and friends or rendered homeless (Silvestre and Oliveira, 2012).

Official discourse claims that the removal of the favela of Vila Autódromo is the only case directly linked with the Games (Anon, 2012; Rio 2016 OCOG, 2014). It is argued that infrastructure-induced displacement, such as the BRT corridors, are the result of policies that would be carried out regardless of hosting the event (Rio 2016 OCOG, 2014). Vila Autódromo is located on the edge of the former Jacarepaguá circuit initially settled by fishermen in the 1960s and expanded with the arrival of the workforce employed for the construction of the same circuit and nearby Riocentro convention centre in the following decade. Since the early 1990s the favela has been subject to continuous threats of removal despite having their right to stay recognized by the state of Rio in the 1990s, the landowner of the circuit. Ownership was transferred to the municipality in 1998 and since then the threats intensified first with the hosting of the Pan American Games and finally with the Olympic award. Their singular case among other favelas prompted the assistance of local architecture and planning schools to help the resident's association to develop a bottom-up alternative proposal (AMPVA, 2012). In demonstrating that the upgrading of the favela did not compromise the works for the Olympic Park and that it would cost less than the compensation and relocation to another site, the plan won the Deutsche Bank Urban Age Award in 2013 (Tanaka, 2014). However, the municipality was adamant in clearing the site which was now included in the PPP contract for the development of the Olympic Park. Different reasons ranging from exposure to natural hazards (Bastos and Schmidt, 2010); environmental damage (Magalhães, 2011); event security (AMPVA, 2012:9); the construction of the MPC (Anon, 2012); the BRT corridor (Tanaka, 2014); and the duplication of access roads (Mendonça and Puff, 2015), were alleged at different times without fully disclosing details and plans despite public requests. Differently from the options given in other cases, relocation was to a housing project 1.5 kilometres away. The six-year intimidation process and psychological stress common in other favelas described above led most residents to accept negotiation leaving a small group to challenge the municipality's plan. As of June 2015 violent clashes with the police gained worldwide attention with the remaining residents fighting for their right to stay (Watts, 2015).

Conclusion

This chapter offered a critical analysis of the preparations for the 2016 Olympic Games in Rio de Janeiro. The spatial implications of the event were contextualized against a historical background of urban interventions and its rationale was traced through the consecutive Olympic bids produced since the 1990s. This concluding section revisits the opening vignette in an attempt to answer the questions posed.

In holding the experience of Barcelona 1992 as a reference, it was expected that the hosting of the Olympic Games could offer a step change for the city, especially in terms of its urban infrastructure. However, the analysis of Rio's bids for the Games demonstrates the lack of coordination between the Olympic project and the city planning policies in order to, as in the case of its Mediterranean counterpart, fast-track urging projects for the city. Resulting from the enthusiasm of the first strategic plan, the 2004 bid was prepared by foreign experts with *carte blanche* to propose a plan that could promote effects similar to those seen in the Catalan capital. For all its unrealistic ambitions the project was true to its intention to distribute benefits more widely. In centring the event in the Fundão Island it was expected that the preparation timeframe would have boosted the programs for cleaning the waters of Guanabara Bay and the upgrading adjacent slums while leaving a legacy of a recovered waterfront and new and renewed facilities for a public university. The reading of the causes of failure in this first attempt served to steer the Olympic project in another direction, by choosing Barra da Tijuca as the centrepiece of future bids and to move away from the premise of hosting mega-events to promote urban change. The Olympic project became a pragmatic plan centralized in the mayor's and BOC decisions to build the credibility of Rio's candidature and win the hosting rights of the Games. The construction of sport venues in a peninsula isolated from its surroundings for the 2007 Pan American Games produced negligible improvements to the city.

Once Barra was firmly established in the master plan of the Olympic project it served to legitimize public policies to an already developed and privileged part of the city despite being in conflict with the general guidance of the city's statutory master plan. Improvements to road access, environmental programs and the extension of the metro network came under the Olympic banner while other programs with the potential of promoting wider territorial benefits, such as the upgrading of the rail service and of the treatment of raw sewage discharged in the Guanabara Bay were deemed low priorities and their targets postponed. The new BRT network, though centred on Barra, takes advantage of previous studies and can potentially improve the transport system in the West and North End. However, the initial experience has confirmed criticism of rapid saturation and overcrowding.

Contrasting the current preparations to other rounds of great urban change the revanchist nature of some policies reinforces the history of great social burden. For most of the thousands of households evicted since 2009 stability and material improvement meant being displaced to the city edges far from the job markets and in areas lacking developed infrastructures. It can be argued that it is unrealistic to expect that the hosting of a mega-event can serve to resolve deeply embedded social and urban injustices. However, just as valid it can serve to exacerbate those injustices, and in the projects carried under its name downplay social and environmental costs.

Notes

1. The efforts of Eduardo Paes to measure himself with Pereira Passos is not only rhetoric. Allegedly he intended to inaugurate the first phase of works for the regeneration of the port area dressed up in historical clothes alluding to Passos. Dissuaded by his staff, an actor posed on his side on the balcony of the Jardins do Valongo instead (Tabak, 2012).
2. As is common practice in this kind of consultancy exercises, stated goals are aspirational and vague making obligatory references to city image, competition for investments and quality of life. The objective set for Rio was to *'Make Rio de Janeiro a metropolis with a better quality of life, socially integrated, respecting citizenship and confirming its vocation for culture and joie-de-vivre. An enterprising competitive metropolis, with capacity to be a center of knowledge and business generation for Brazil, and its privileged connection with other countries'* (PCRJ, 1996: 23).
3. The following observations are based on a current research undertaken by the author on the making and delivery of the *Porto Maravilha* regeneration project.

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