

Steffen Lehmann

One of the most remarkable Brazilian architects in the 20th Century, Italian émigré Lina Bo Bardi (Rome 1914–São Paulo 1992) has recently been “rediscovered” and her heterogeneous and unusually diverse oeuvre been celebrated. Born in Italy and arriving in Brazil in 1946, multi-talented Bo Bardi was, as well as an architect, a furniture designer, urbanist, political activist, editor and writer and a curator of exhibitions. This chapter outlines the importance and benefits of Bo Bardi's adaptive reuse projects, which are part of her late work. Her strong engagement in the adaptive reuse of existing buildings (rather than only in new-built construction) marks a clear paradigm shift in thinking about the historical context and colonial structures in Brazil, as well as the commencement of adaptive reuse as an eligible strategy for sustainable urban renewal of the run-down Baroque city centres. In the 1970s, this introduced an entirely new approach to Brazil, as the previous period of heroic Modernism usually started with a “clean slate,” involving the complete demolition of existing old fabric to make space for the new.

First, the chapter explains the important link between retaining existing buildings and sustainability, its positive environmental and social impacts. Adaptive reuse can frequently reduce the negative impact of construction on the environment and the depletion of non-renewable resources; in addition, it maintains the place identity. The cases of adaptive reuse projects in Salvador and São Paulo (realised between 1977 and 1992) encapsulate the new focus on urban rehabilitation of the run-down historical districts and their Afro-Brazilian cross-connections. During this time, Bo Bardi's aesthetic inspiration and search for meaning led to her own personal interpretation of the vernacular and colonial.

## Introduction

Preceding studies have sought to identify the architects and theorists involved in the making of modern identity of Brazil, and the mechanisms that created such identity, from Lucio Costa and Roberto Burle Marx, to Oscar Niemeyer and Vilanova Artigas (Mindlin 1956; Bullrich 1969, Joedicke 1979; Lehmann 2004). The history of architectural modernism in Brazil is one of exchanges, transfers and cultural crossovers with the developed world and with the Afro-Brazilian culture (especially with the culture of the slaves' origin countries in western Africa, such as Benin, Mauretania and Angola). And one of the difference between the various cities, especially between São Paulo, Rio de Janeiro and Salvador (Bahia). In the 1940s, São Paulo became the centre of Brazil's economy and grew rapidly: by mid-1950s it had already 2.5 million people and by 1970 São Paulo counted 6 million inhabitants (today, São Paulo is the most multicultural city in South America, producing over 11 % of Brazil's entire GDP; São Paulo is a megalopolis of 19 million people, the world's fifth most populous city, with an ever expanding urban sprawl as it runs the engine of Brazil's economy; but São Paulo is also a divided city: between rich and poor; and between gated condos and favelas).

After its arrival in the 1930s, Modernism quickly flourished in Brazil and led to its climax in the construction of Brasília, the new capital that was—despite being so far away from Europe—built at a monumental scale and strictly to the urban zoning principles as advocated by the CIAM and the 1933 Charter of Athens (Evenson 1973; Deckker 2001; Piccarolo 2013) (see Fig. 2.1).

In the 1950s, Brazilians watched the creation of their new capital Brasília—without doubt one of the most utopian projects of the Modern Movement—and witnessed the rapid transformation of Brazil's fast growing cities, while large parts of the population still lived in precarious accommodation and poverty. The development of architectural design at that time was particularly bound to the private single-family

---

S. Lehmann  
Cluster for Sustainable Cities,  
Faculty of Creative and Cultural Industries,  
The University of Portsmouth, Portsmouth, UK  
e-mail: steffen.lehmann.cities@gmail.com

**Fig. 2.1** Brasília, the federal capital of Brazil is located atop the Brazilian highlands in the country's Centre-western region. It was founded in 1960, to serve as the new national capital, planned by Lucio Costa in 1956 in order to move the capital from Rio de Janeiro to a more central location. The city's design divides it into numbered blocks (superquadras) as well as sectors for specified activities, such as the Hotel Sector and the Banking Sector (Photo Nelson Kon, 2006)



house, belonging to the new, emerging middle-class that began to flourish, following the economic boom in the late 1950s (Lara 2008). During this time not only Brazil, but all of Latin America went through deep change. Barry Bergdoll notes that “the period 1955 to 1980 was a period of intense creativity across Latin America and the region that occurred despite violent political and economic upheaval. It was a very complicated period of dictatorships and political turmoil coinciding with extraordinary architectural production” (MoMA catalogue 2014).

Some of the architects' modernist houses (including Bo Bardi's own Glass House, 1949–51) re-elaborated the traditional courtyard layout, incorporating carefully selected local plants, while others elaborated solid–void relationships in an almost sculptural manner (for instance, houses by Artigas and Niemeyer). The *Casa de Vidro* (aka Glass House) was still in a modernist style and influenced by Italian rationalism, keeping up with the international trend. This courtyard house sits on slender circular columns, which allows the lush landscape to flow under the building. Other houses built in this era in the United States included modern buildings known to Bo Bardi from publications, such as: the Farnsworth House by Mies van der Rohe, 1947; the Case Study House No. 8 by Charles and Ray Eames, 1949; the Glass House by Philip Johnson, 1948; and a couple of courtyard houses built by Bernard Rudofsky that were featured in the *Brazil Builds* exhibition (1940–42). The plans of these houses (all pre-dating Bo Bardi's Glass House) were published widely around the time when Lina Bo Bardi and her husband, Pietro Maria Bardi (1901–1999) were planning their own new house in São Paulo (see Figs. 2.2a and 2.2b).

In the 1940s and 50s, Brazil was eager to overcome the “dark ages of colonialism” and instead build in a modern, contemporary style, defining the idea of the modern Brazil that expressed an optimistic forward-looking identity for the future of the country—also supported by politics, such as Getulio Vargas' politics of the *Estado Novo* (the New State)—creating a climate of optimism that helped vanquish the colonial past, the Portuguese baroque and the previously dominant French style of the nineteenth century (Le Corbusier 1930; Goodwin 1942; Bullrich 1969; Acayaba and Ficher 1982; Kamita 2000; Bruan 2002; Cavalcanti 2003; de Oliveira 2006; and McGuirk 2014). During this period, architecture's task was primarily to support the formulation of a new national identity of the young nation. In this climate there was little interest in maintaining and celebrating the old colonial architecture; the historical city centres fell in disuse.

Her long-time collaborator Marcelo Suzuki recalls that Bo Bardi referred numerous times to the importance of MOMA's *Brazil Builds: Architecture New and Old, 1642–1942* exhibition (1942–43), as “an announcement of something *unique* in comparison with the *known* world, the *cultured West*, and as a publication and exhibition that had changed everything” (Suzuki 1994).

With regard to the Modern Movement, Brazil has been particularly privileged in two important ways; firstly, the influx of immigrants from Europe introduced a cultural openness to and acceptance of the cubic, orthogonal compositions of European modernism; and there was little resistance to the foreign, “the imported” (Lara 2008). One may claim that Rio de Janeiro (always more French influenced) and São Paulo (more Italian in immigrant population



**Figs. 2.2** Soon after arriving in Brazil, Lina Bo Bardi commenced designing the couple's own house in São Paulo's suburb Morumbi: an elegant courtyard house called Casa de Vidro with volumes arranged around the exterior space, 1949–51 (Photos Federico Calabrese, 2015)

and character) are both cities where, until today, a normative modern international architecture has accounted for a large part of the urban fabric. Beside Bo Bardi, a number of Italian architects had emigrated from Italy to São Paulo, where they enjoyed a productive career (for instance, Rino Levi, Gregori Warchavchik, Daniele Calabi and Olavo Redig de Campos all studied architecture at the Sapienza University in Rome in the 1920s before leaving for Brazil).

Immigrants also supplied the building boom with cheap construction labour. With the wide-spread availability of reinforced concrete, the growing demands of booming cities for large new infrastructure and public buildings could be met in a short time. Concrete became the typical, characteristic material in all Brazilian regions and was widely used for the new modern architecture (Lehmann 2014). Secondly, Brazil is blessed with a warm climate for most of the year, and this, together with the varied topography of its cities, has had a mediating influence on modern abstraction (Bergdoll/MoMA 2015). But in contrast to her earlier striking buildings that Bo Bardi designed in São Paulo (such as the Casa de Vidro and MASP), her late work in Salvador, Bahia is based on careful adaptive reuse of existing buildings and integrated into the historical context of the historical Baroque city (Ferraz 1993, 11). This chapter argues that the renovation works by Bo Bardi mark the beginning of a particular version of “sustainability” in modern Brazil, in the late 1970s.

In the 1980s, Lina Bo Bardi made adaptive reuse of existing brownfield sites and regeneration of derelict urban quarters fashionable in Brazil. From the rejuvenation of a

disused barrel factory into a public leisure centre (SESC Pompéia in São Paulo) to the renewal of the historical Pelourinho district (the city centre of Salvador, Bahia), under-utilized, abandoned or disused buildings and sites have been rediscovered as a precious resource that can be transformed towards new usages, and as a result deliver significant social benefits. *Casa do Benin* and *Casa do Olodum* (both in Salvador) are good examples of the various specific restoration and reuse projects carried out by Bo Bardi for the rehabilitation of the historical centre. Here, she used adaptive reuse as a design strategy to deliver resourceful projects that maintained the identity of place.

### Bo Bardi's Path from Modern Avant-Garde to Vernacular Regionalism

Mid-twentieth century Italy gave birth to some of the world's most radically architecture (just think of Giuseppe Terragni, Gio Ponti or Carlo Scarpa), but different from Carlo Scarpa's subtle approach to the adaptive reuse of existing buildings, Bo Bardi broke away from the European tradition. While both, Bo Bardi and Scarpa took inspiration from Japan (both travelled several times to the Asian country, studying its architecture), both left a compact yet unusual and powerful body of works behind, and both worked in different unusual locations: Scarpa worked in Venice (and not in Milan) and Bo Bardi in Salvador (and not in Rio de Janeiro)—the resulting architecture could not be



more different. Where Scarpa's focus was on honouring history and transcending it through an elegant obsession with the detail, Bo Bardi was not too much interested in the use of precious materials or refined details; she accepted rough insertion and contrast as design strategies while maintaining the structures' original integrity.

In Brazil, Bo Bardi was never part of the main group of architects in São Paulo. She was not accepted into the male-dominated "elite club" of the University of São Paulo. When I met with Lucio Costa, Roberto Burle Marx and Paulo Mendes da Rocha in the late 1980s, she was hardly mentioned in our conversations. Bo Bardi was an outsider, interested in doing "her own thing", and often described as prolific and non-conformist (Zeuler Lima 2013; and AV 2015). She had a fascination with Brazilian folk art and popular culture particularly that of the country's heavily Africanized northeast, Bahia—at a time when her Paulista colleagues were still under the Corbusian influence. This influence was strong and prevailing since Le Corbusier's two visits to Brazil (in 1929 and 1936; Le Corbusier had published his *Precisions* manifesto in 1930, following his Grand Tour to Latin America and his participation at the Southern American conferences in 1929).

In unravelling the link in Bo Bardi's unusual work between regional cultures, colonial heritage, what became apparent was her adaptive reuse potential of existing buildings. These emerging principles of ecological architecture that emerged in the early 1970s and 80s is what we call today "sustainable architecture".

The globalising forces of international modernism are believed to have eliminated differences, obliterated individual identities and led to more homogeneous architectural forms worldwide. Of course, we have to keep in mind that architects, as creators of "constructed identities", have in reality only limited powers to shape society or change cities. Peter Herrle has written extensively about the loss of regional identity and its association with the built environment, noting: "The loss of local coherence and identity is something that cannot be counterbalanced by just one professional group (the architect). Identities in architecture have always been a blend of different streams amalgamating in a given culture at a given point in time" (2008, xi). Chris Abel points out that identities in architecture are being "constructed", and do not only depend on cohesiveness or a system of shared values; diversity is part of the pattern of local architecture, and plays an important role in the making of this identity (Abel 1997).

In the case of North-eastern Brazil, much of the identity has been influenced by African culture; and these cultural influences originated from the African slaves who were brought to Brazil by force, and imported their various cultures to their new homeland (Freyre 1986). The importation of slaves to Brazil began midway through the 16th century

and continued well into the 17th and 18th centuries. The first Portuguese settlement in Brazil was established in 1532 and the colonists were heavily dependent on indigenous slave labour during the initial phases of establishing the settlements. In the end, Brazil imported more African slaves than any other country: an estimated 4.9 million slaves from Africa came to Brazil during the period from 1501 to 1866 (Freyre 1986). Slave labour was also the driving force behind the growth of the Brazilian sugar industry, which was the primary export of the colony to Europe from 1600–1650; from 1690 on, the mining of gold and diamonds was added, further increasing the importation of African slaves to power this newly profitable market. The rise of the coffee industry in the 1830s further enticed expansion of the slave trade. Alone in the 18th century, over 1.7 million slaves were imported to Brazil from Africa (Freyre 1986).

Brazil was the last country in the Western World to abolish slavery and the slave trade, in 1888. By then, an estimated four million slaves had been imported from Africa to Brazil (Bergad 2007). Today, the cultural influence is still visible in Bahia, such as Carnival and the drumming band *Olodum* in Salvador, which goes back to musical protest as a product of slavery and black consciousness that has slowly grown into a more powerful force and awareness of its cultural roots. For Bo Bardi it was interesting for her to explore how the cultural dynamics of this rich Afro-Brazilian history are reflected in the urban landscapes of Brazil.

After arriving in São Paulo and adopting Brazil as her new home country in 1946, Bo Bardi soon embraced the traditional cultures of her adopted country. She fell in love with the regional culture of North-eastern Bahia and learned to appreciate the colonial architecture ("discovering the true Brazil as authentic regional expression", as Bo Bardi used to say (quoted by Marcelo Ferraz 1993, 12). From 1959 to 1968, she moved to Bahia and spent most of her time in Salvador, renovating and adaptively reusing several baroque buildings, which has been described as the beginnings of the Brazilian sustainability movement and heritage conservation (SPHAN, the Brazilian equivalent of the National Trust, was founded in 1936 by Lucio Costa and others and grew significantly in the 1950s; Lucio Costa was also head of the country's Heritage Trust, IPHAN—Instituto do Patrimônio Histórico e Artístico Nacional) (Costa 1995; Lehmann 1998).

Describing her work as "anchoring modernism in the region", Bo Bardi organised numerous exhibitions of Bahian, Afro-Brazilian cultural artefacts. In her own home, the *Glass House*, she lived in the midst of an eclectic collection of locally produced objects and artefacts, surrounded by lush nature and the intense Brazilian light that created a unique atmosphere. During this time, she arguably became "more Brazilian" than the Brazilian people themselves. Bo Bardi's

multidisciplinary activities went across architecture, publishing, curating and scenography; for instance, she organised a number of exhibitions of Brazilian-produced objects, including indigenous utensils, to display the immense creative potential that existed in Brazil.

The beginning of sustainable architectural and urban design within Brazilian modern architecture is an important point as it also represents a turning point in the appreciation of the African-influenced cultures in Brazil's Northeast. The adaptive reuse projects by Bo Bardi in Salvador identify the beginning of this new approach towards cultural heritage and urban renewal, including the re-appreciation of "the everyday of Afro-Brazilian culture" and the recognition of the high value of ordinary vernacular architecture within Brazil's regional culture.

The city of Salvador de Bahia was founded in the 16th century (1549) as the seat of the Portuguese government in the Americas and served as Brazil's first capital for more than two centuries. However, in the 1950s Bahia was seen as traditional and backward. Bo Bardi frequently emphasized vernacular buildings and artefacts from Bahia, because they often responded well to the environment and climatic conditions of the region, and thereby provide valuable ideas and clues for a modern architecture that is connected to its climate and geography; for example, she observed that they tend to have low ceilings in cold climates and high ceilings in hot climates, a concern widely ignored by modernism.

Around this time, Bo Bardi also discussed her interest in African cultures, religions and the Condomble' traditions with French-born anthropologists Roger Bastide and Pierre Verger, who regularly visited Salvador between 1940 and the late 1950s (Araujo 2013). After the completion of the MASP in 1968 she had moved for a couple of years to Salvador (leaving São Paulo during the harsh years of the military dictatorship), where she was close to important cultural thought leaders, which influenced her own thinking and further inspired her interest in cultural traditions. Oliveira describes Bo Bardi's interest in the spiritual and the symbolic as a "form of resistance" (2014, 162); and there are also the ethical aspects to Bo Bardi's work, what Angela Starita describes as "the ethical use of the vernacular" (2016).

"Vernacular buildings are usually made of locally sourced construction materials, employ local, mainly renewable sources of energy, and adopt construction practices that favour recycling and respect for nature. (...) The reuse of construction materials is a feature of vernacular architecture" (Edwards, 2014, 22). Regions are always defined through their local materials, tectonics and particular typologies, and the architectural character defining regional spaces, in turn, shapes, retains and enhances social identity (Semper 1860; Frampton 1983/1995). Regional architecture becomes a dynamic manifestation of new and developing ideas through hybridisation and integration (a phenomenon

also described by Bernard Rudofsky in 1964 in *Architecture without Architects*).

Regional forms are sometimes seen as conservative manifestations of static cultural traditions that are rigid and maintained from one generation to the next, lacking innovation (Lefaivre and Tzonis 2003). However, in the case of Bo Bardi's working method, regional architecture is respected as the result of a set of dynamic forces, the outcome of a process of integration of diverse cultural, environmental, social and technological influences. Just as a simplistic binary that opposes modernism and regionalism would be wrong, it would also be incorrect to say that Bo Bardi was first a modernist and then became a regionalist. As we know from her own writings, she has clearly been thinking about these different concepts for many years, already before putting them into her practice, and, even then, there is a mix of modernist and vernacular approaches (as well illustrated in the SESC Pompeia project).

Thus, it is fair to say that regional architecture is the result of dynamic forces, the outcome of a process of integration of diverse existing cultural, technological and environmental influences, where outside influences and innovation have their impact diluted by local conditions. Botz-Bornstein has noted the existence of "different Critical Regionalisms" (2015). Brazil's dynamic regionalism distanced itself from the naïve utopianism of the early heroic Modern Movement, while the buildings responded much more pragmatically to the specific conditions of the tropical climate, the harsh light and the particularly availability of materials (Lehmann 2008).

---

## Defining the Link Between Adaptive Reuse and Sustainability

Modernity and sustainability are closely intertwined in the challenge of creating better places to live and work. The existing built fabric represents a high value that offers a resource in terms of social, economic and environmental sustainability. There is an opportunity and duty to preserve the existing fabric and reuse buildings which have lost their original function, which are physically obsolete, or which no longer meet today's ever-more demanding standards. It is part of the contemporary agenda of urban renewal to reuse material and space, realise spatial and functional transformations and update regulations concerning fire, user safety, energy efficiency and environmental comfort.

Linking adaptive reuse of old buildings with sustainability, there can be significant positive environmental and social impacts from conversions of existing buildings, beyond the sheer heritage value. The case studies in Salvador and São Paulo reduced the negative impact on the environment and the depletion of non-renewable resources. However, until today, the urban dimension of Bo Bardi's

work in Salvador and São Paulo has not been sufficiently discussed or appreciated. Besides her social approach, there is also a strong environmental position that laid the foundation of sustainable urban renewal in Latin America; and Bo Bardi's sustainable and socially-conscious design method is directly informed by regionalism. In addition, it's a strategy that retains the embodied energy of the existing urban fabric and exemplifies the cultural significance of these structures: keeping the existing buildings maintains the cultural identity and exemplifies the tectonic evolution of the vernacular architecture.

In 1973–74, the challenge of the ecological crisis emerged as a new issue, following the first *Oil Crisis*, and the publication of the pivotal book *The Limits to Growth* (Meadows et al. 1972). Both, the event and the text had many short-term and long-term effects on global politics and the economy, and generated a fervent debate (also between Brazil's intellectual circles). *The Limits to Growth* revealed that unlimited growth was impossible, given finite resource supplies and population growth, marking a time when the ecological architecture movement emerged.

Bo Bardi's adaptive reuse of existing buildings therefore marks a paradigm shift in thinking about historical structures in Brazil and the commencement of renovation as eligible strategy for entre urban precincts. This was an entirely new paradigm, as the previous period of Modernism usually started with a “clean slate”, after the complete demolition of the existing old fabric to make space for the new (Giedion 1941).

Following her early modernistic and structuralistic works, such as the Glass House or MASP Museum in São Paulo (both still inspired by the International Style and Structuralism), the late thoughtful work of Bo Bardi is of an entirely different quality: recycling, up-cycling and adaptive reuse is applied as an urban design strategy where the *New* sits comfortable side-by-side with the *Old*, without ever imitating the existing. Thus, Bo Bardi created her own continuation between dynamic vernacular and the modern avant-garde (Lehmann 2014, 142).

In regard to the resourcefulness and reuse, Zeuler Lima notes that “Bo Bardi's social and ethical awareness, and her talent for making do with scant resources—honed during her

native Italy's World War II devastation—speaks to our anxious, solution-seeking era” (2013, 82).

From the rejuvenation of a disused, neglected barrel factory into a highly popular public cultural and leisure centre (SESC Pompeia in São Paulo, 1977–86), to the renewal of the historic Pelourinho district (the old Baroque centre of Salvador, 1986–92), such underutilized, abandoned or disused buildings and quarters are seen as precious resources. These can be transformed towards new usages and offer significant environmental and social benefits. Two cultural centres, *Casa do Benin* and *Casa do Olodum* (1987–89, both in Salvador) are good examples of the various specific restoration and reuse projects carried out as part of the rehabilitation of the historical centre, where new circulation systems and programs were carefully inserted into existing structures (de Almeida Lima 2013). The insertions of new structures respect rather than mimic its historic setting.

Adaptive reuse refers to the process of reusing an old existing building or site for a purpose other than which it was built or designed for. Design for reuse and durability includes the ability to satisfy changing user needs over time, emerging economic factors and complexity, and the “loose-fit” ability to integrate new technologies (see Table 1).

Reuse, recycling, recovering and remanufacturing have all entered our vocabulary. To reuse (for example a building) is to use an item again after it has been used. This includes conventional reuse where the building is used again for the same function, and adaptive reuse, where it is used for a different function. In contrast, recycling is the breaking down of the used item into raw materials, which are then used to make new items. Thus, the most sustainable building is the one that already exists.

Adaptive reuse, also known as “up-cycling” of buildings (or repurposing), is the process of taking disused buildings that are now unwanted for their original function and transforming them again into a useful building (this is different from recycling, where the building materials are broken down to their component parts and re-manufactured into new parts, such as walls or floors). Adaptive reuse is also different from conventional reuse, where the product is used in its original purpose again.

**Table 1** The typical life-expectancy of different elements in the built environment (after: McDonough and Braungart, 2003)

Typical life-expectancy of different elements	
Commercial interiors	2–3 years
Building interior finishes	5–10 years
Building services	15–20 years
Building's usage	30 years
Building's structure	50+ years
Urban infrastructure (roads, railways)	100+ years
Cities	500+ years

Bo Bardi's concept is quite simple: retaining as much of the existing building fabric as possible, working within the original envelope, providing new insertions such as staircases, to improve the circulation. Similar to today's Burra Charter, which recommends to do "as much as necessary, and as little as possible": all new work is made to read differently from the existing fabric so that the important qualities of the building's past have been retained (such as the rich texture of the stonework and brick walls).

Through adaptive reuse of derelict, unoccupied buildings, these can become again suitable sites for many different types of use. Along with brownfield sites' reclamation, adaptive reuse is seen by many as a key factor in the reduction of urban sprawl and construction waste. The increasing waste generation from construction and demolition is a growing worldwide concern. Instead of demolition, extending the lifecycle of buildings through their up-cycling and reuse is right at the core of any sustainability concept. By reusing an existing structure the energy required to build these spaces is lessened, while the embodied energy in the building is maintained and the amount of new materials required for construction reduced; at the same time, the material waste that would come from destroying old buildings is also reduced (Lehmann 2016).

Much of our existing building stock predates modern energy standards and it is estimated that 80 percent of buildings in existence today will still be there in twenty years' time. It is therefore the physical improvements to our existing buildings and neighbourhoods that will really deliver the emission reductions needed. Upgrading the existing building stock is always a simple way to address inefficiencies and a secure way to reduce carbon emissions.

Industrial buildings and warehouses are frequently best suited to adaptive reuse, as they offer the maximum flexibility and high ceilings. Adaptive reuse can also be controversial if there is a blurred line between façadism (for example, only keeping a small token part of the existing building, such as its façade wall), or a compromise with historic preservation to serve heritage policies; in addition, the cost of conversion can be prohibitive high, making it impossible to keep the existing structure. Bo Bardi's project have always avoided this trap and are strong evidence for the potential of true adaptive reuse. It was always very important for Bo Bardi to know exactly how the local community would benefit from the reuse of once abandoned sites or buildings (Whyte 1980; Abel 1997). She recognised the importance of the factory space and instead of demolition, she proposed to maintain it—a novelty in Brazil at this time.

Repurposing of old buildings can also be a response to financial limitations. Today, local governments often provide financial incentives for adaptive reuse, as there are many criteria that can affect the economic return of adaptive

reuse (for example, the increased risk of hidden costs in reusing older buildings and the danger of unknown contamination) when compared with new-built. Factors such as the reuse of materials and resources as well as a lesser need to involve energy, both in terms of labour and machine powered, can effectively decrease the funds needed for adaptive reuse. Determining the balance of how the several effects of adaptive reuse interact is often best accomplished by a formal lifecycle assessment (Ward 2012).

Implementing emission-reducing retrofits and gaining a better understanding of the actual performance benefits is the next step. Retrofitting and modifying existing buildings and systems to greatly improve energy efficiency through relatively simple measures (through insulation, high performance glazing and so on) represent the lowest cost route to reducing energy demand and carbon emissions. It is therefore beneficial to monitor and track the improved energy performance of upcycled buildings, so that the financial basis for retrofit could be incentivised by rewarding measured success (Lehmann 2010).

---

### Upcycling Buildings and Repurposing Abandoned Sites: Case Studies in Salvador and São Paulo

The regeneration of former industrially used sites and the careful redevelopment of disused, derelict brownfield sites and buildings are a basic part of sustainable urban development. The presented projects exemplify well the application of Bo Bardi's adaptive reuse principles. The projects that are of particular relevance to her sensitive adaptive reuse work are:

- **SESC Pompéia in São Paulo, 1977–78 and 1982–86** (Stage 1 was completed in 1978)

The SESC Fábrica da Pompéia cultural and leisure centre is one of Bo Bardi's most important projects and her largest one. Over several stages, a disused steel barrel and refrigerator factory was transformed into a public cultural and sports centre. Instead of demolition, the formerly industrial precinct is transformed into a modern public facility. The existing ensemble of older industrial buildings had a specific authentic period character through its brickworks, detailing of the roofs and other features of the constructed eras that newer or reconstructed developments would have lacked. Bo Bardi carefully extended the reused ensemble with new buildings, such as a concrete tower of vertically stacked volley-ball fields, heightening the awareness of the "new". The cloud windows are evidence of her inventive playfulness (see Figs. 2.3 and 2.4).





**Figs. 2.3 and 2.4** The cultural and leisure centre SESC Pompéia, São Paulo (1977–86), making use of a former factory and extending it with a beton brut tower. Lina Bo Bardi also designed the simple

timber furniture; a sensitive adaptive reuse of the former steel barrel factory into a highly popular community place (*Photos supplied by the author*)



**Figs. 2.5 and 2.6** Lina Bo Bardi with André Vainer (*left*) and Marcelo Ferraz (*right*) at SESC Pompeia, São Paulo, 1986. Bo Bardi's addition to the site were two imposing towers made of off-form

concrete (*Photo Eduardo Simões*). *Right* The new water tower, SESC Pompéia, São Paulo, 1984 (*Photo Marcelo Ferraz*)

The determining criteria for the reuse of the old factory ensemble included:

- The societal value of the site and its importance to the community of workers that used to spend their lifetime on this site.
- The historical importance of the site, in this case especially the role of the former factory in the community's understanding of the past.

- The potential for the reuse of the particular site. The physical damage was small and the site was ideal to support its future use as centre for culture and sports.

The project that most clearly exemplifies Bo Bardi's break with modernism is the cultural centre SESC Pompeia: this adaptive re-use and extension of a former factory was environmentally sensitive and poetic at the same time, creating an assemblage and topography of old and new (SESC is the



Serviço Social do Comércio, a union-led chain of leisure centres for Brazil's working class). There are various scales of intervention but the "new" is always respectful of the existing buildings and structures, designed with great precision and without imitation. The SESC Pompéia cultural, sports and leisure/recreational centre expresses Bo Bardi's core belief in an architecture that serves the masses without condescending to them. Inspired by San Francisco's renovated Ghirardelli Square (which was the first major adaptive re-use project in the United States, opened in 1964), the multi-use compound is like a village assembly of spaces and includes a swimming pool, a theatre, and exhibition galleries.

The creation of such a diversity of interesting public spaces for the working people also contributes to the health of urban dwellers, which improves with the level of access to public open spaces.

The SESC Fábrica da Pompéia is considered as a milestone in Bo Bardi's work: the conversion of the 1920s steel barrel and refrigerator factory into a very successful, much-loved leisure centre: it preserved the character, intrinsic substance and memory of the past through the reuse of the factory buildings. Initially, the original factory was due to be demolished and the new SESC Pompéia would have replaced it. Bo Bardi, however, suggested that the factory be kept and not demolished as had been planned, but instead redeveloped, on the grounds that it was already informally colonised by some of the uses which the new centre was intended to serve. Firstly, many of the former workers still lived in the neighbourhood. Secondly, at her first site visit, Bo Bardi had realised that the derelict factory was already informally occupied by people from the neighbourhood in a way it intended to be used for by SESC: there were active football teams, an lively amateur theatrical group, dance groups and improvised barbecue places. It was always important for Bo Bardi to first observe what was happening in the space naturally, before proceeding with her own design decisions. Always driven by an urge to design and build what people want, Bo Bardi noted: *What we want is precisely to maintain and amplify what we've found here, nothing more* (Ferraz 2012, at "Lina Bo Bardi: Together" exhibition web site, 2).

Bo Bardi proposed to strip back the existing building to its essence, exposing the beautiful but rough reinforced concrete structure and brick walls. The decision to keep the existing structure significantly enhanced the sense of place from a social point of view. There is a strong relationship between the existing factory and the local community, a working class district of São Paulo. The decision to keep the original factory paid respect to the history of human labour that took place there; in the words of Marcelo Ferraz, who worked as one of the architects on the SESC Pompéia:

The rehabilitation of a former factory—a place of hard work; of suffering, for many; a testament to human labour—and its

transformation into a place of leisure, without erasing its history, make SESC Pompéia a special space. The care taken to ensure that so many details of the old factory remained visible—whether on walls, floors, roofs and other structures, or in the new facilities—meant the space would begin its new life full of warmth and animation.

(Ferraz 2012, at "Lina Bo Bardi: Together" exhibition web site, 3)

Here, Bo Bardi's experiments with reinforced concrete, *beton brut*, continued, in combination with the reuse of the post-industrial brick shell of the abandoned factory. She later added three towers: a water tower and two towers housing the sports courts and changing rooms. The whole project has a certain roughness and aims for a clear contrast between the new and the authentic old. Y-shaped bridges connect the towers, turning the journey from locker to court an event of circulation and urban drama. Being deeply committed to the social and cultural potential of architecture, SESC Pompéia illustrates the power of architecture as "an agent of social change", supporting residents of a poor working-class neighbourhood with cultural and sports facilities, maintaining the identity, memory and history of place through careful adaptive reuse and extension.

SESC Pompéia has a generosity in plan that allows its multiple activities to co-exist in a relaxed way: high and low culture, old and young, ambitious architecture and the everyday, football and ballet. Rowan Moore commented on the multi-functionality of the precinct:

It houses football, swimming, theatre, dance and art. Old men play chess there, and children play with building blocks. You can eat in a popular canteen, and you can sunbathe on a boardwalk called "The Beach". Or you can simply sit and watch the passing scene, as you might in a park.

(Moore 2012)

Besides Bo Bardi, the main architects for the project were André Vainer and Marcelo Ferraz; the development of the project included input of many others. The project also included artists, technicians and workers in all aspects of the proposal, and Ferraz recounts the working process and participation of others:

André Vainer and I, first as students and then as recent graduates, were privileged to take part in this adventure. For nine years (1977–86) we developed the project with Lina, working every day in the midst of the building site: monitoring the ongoing projects, the in situ experiments, the involvement of technicians, artists, and especially workers... We had an office inside the building itself; the project and the programme were formulated as an amalgam, joined and inseparable. The barrier that would normally separate the virtual and the real did not exist; it was architecture made real, experienced in every detail.

(Ferraz 2012, at "Lina Bo Bardi: Together" exhibition web site, 4)

In the importance of collaboration in the design and construction process, Bo Bardi's goal was to place people at

the forefront of all design decisions, not just the direct end-users, but the wider community. According to her former collaborators (Vainer and Ferraz), she had very clear ideas how she wanted the spaces to function, making sure that everything was aimed to create a sense of leisure within the project. The purpose of design is to facilitate the building's ability to invite the user to participate in certain social situations and activities, and SESC Pompeia is doing this very well (see Figs. 2.5 and 2.6).

### The Rehabilitation of the Historic Pelourinho District, the Old Baroque Centre of Salvador, Bahia, 1986–92

Salvador has a long colonial history and it was not only the historical and cultural epicentre of Bahia (named a World Heritage Site by UNESCO in 1985), but also the first capital of Brazil. For many decades, the Baroque centre was left in decline and became unsafe to visit as old buildings crumbled and roofs collapsed. It required the political support from Mario Kertesz (then mayor of Salvador) and Gilberto Gil (the influential musician was then Minister for Culture) to overcome scepticism that renovation of the old quarter (instead its complete demolition) would be a viable option for the historic site. The existing building stock provides a valuable resource for urban regeneration and, once restored, can improve the liveability of urban areas.

For some sites that have been left alone for decades to decay by neglect, the physical damage of the site can render

the site unusable both in terms of the cost to repair the damage as well as unsafe by government standards. Rehabilitation programs first focussed on the historic centre, the colonial *Centro Historico*, and later expanded to include the *Ladeira da Misericordia*. These colonial buildings are robust in form and construction, adaptable for different use and have an attractive character; their significant potential for reuse and adaptability to new usage makes adaptive reuse preferable to demolition. Demolition would only add to future resource stress, pollution and waste.

Today, the Pelourinho area demonstrates an important part of the history and culture of Brazil. The smallness of scale and fine urban grain of the rehabilitated Baroque quarter serves as a model of urban renewal and decentralised democracy (see Figs. 2.7 and 2.8).

- **Adaptive reuse of existing buildings as cultural centres Casa do Benin and Casa do Olodum in Salvador, 1987–89**

Two 19th-century buildings on the corner of *Praca do Pelourinho*, the main square of Salvador, were converted into Afro-Brazilian cultural centres. One of the advantage of these two four-storey buildings is their prominent location in the historical Baroque centre of the city. Bo Bardi retained the historical facades and inserted a new circulation, staircase, exhibition spaces (a long distinctive main space) and a library and restaurant that promotes the culture of the African country Benin (the origin of a majority of slaves) (see Figs. 2.7 and 2.8).



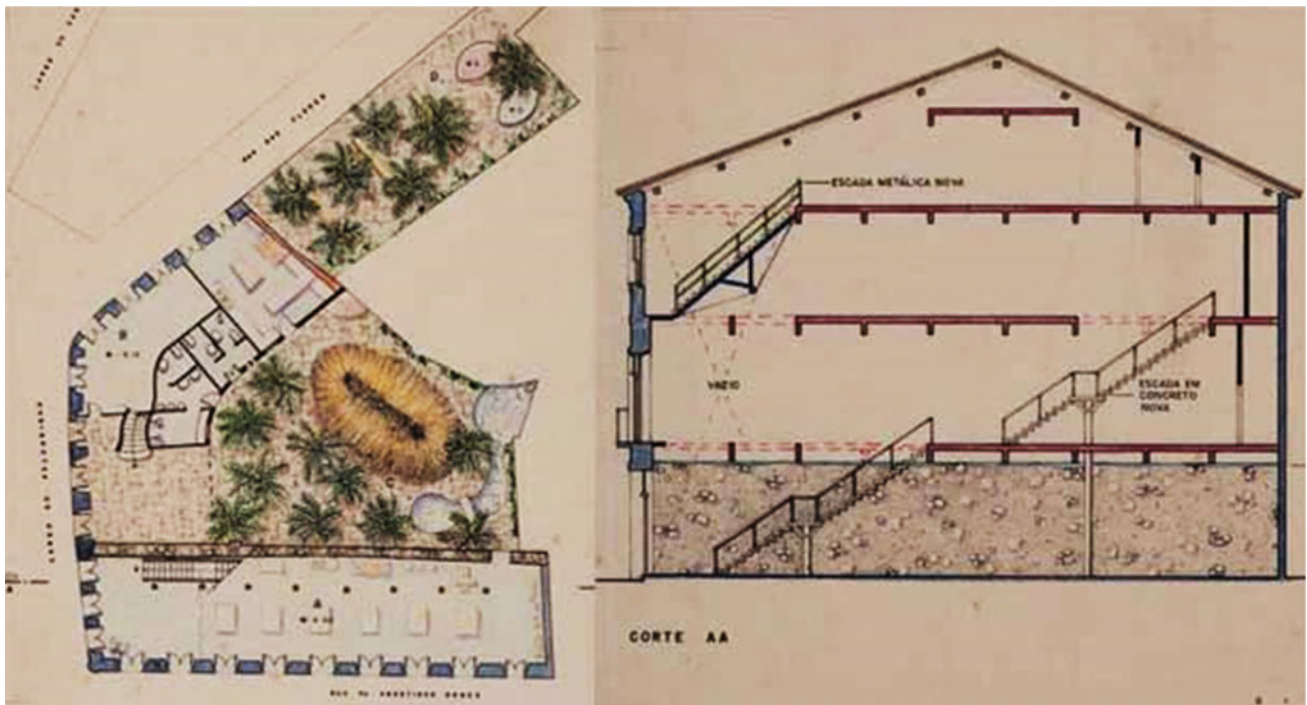
**Figs. 2.7 and 2.8** *Left* Projeto Barroquinha, Salvador de Bahia (built 1986–90), the careful urban renewal and renovation project of the run-down but historically significant Baroque city center, by Lina Bo Bardi in collaboration with the musician Gilberto Gil. It includes the

adaptive reuse of Casa do Benin and Casa do Olodum, both Bahian-African cultural centers. *Right* Casa do Benin (Courtesy Instituto Lina Bo e Pietro Maria Bardi)





**Figs. 2.9 and 2.10a** *Left* Staircase insertion in the Centro Cultural Casa do Benin, the Bahian-African cultural center (Salvador, 1987). *Right* The large timber spiral staircase Escada de Madeira, in the Solar do Unhão (the former Museu de Arte Moderna), Salvador



**Fig. 2.10b** Plan and section of Casa do Benin (Courtesy Instituto Lina Bo e Pietro Maria Bardi)

- **Ladeira da Misericórdia in Salvador (in collaboration with architect-engineer João Lele Filgueiras Lima), 1987–88**

The *Ladeira de Misericórdia* (meaning “Mercy Slope”) is a historically important staircase link, connecting Salvador’s lower (port area) with the upper areas (the historic centre

Pelourinho). It is one of the few remaining historic pedestrian connections between these two sections of the city, with examples of 17th century colonial houses along the staircase.

Bo Bardi restored three of the derelict buildings along the Ladeira and converted them into social housing, and inserted a new restaurant building, the *Restaurante do Coaty*. Today the





**Figs. 2.11 and 2.12** *Left* Restaurante do Coaty, at the Ladeira da Misericórdia, built in curvilinear shape around a mango tree, recognizably different from the existing buildings (Salvador, 1987–88), by

Lina Bo Bardi and João (Lélé) Filgueiras Lima (Courtesy: Instituto Lina Bo e Pietro Maria Bardi; S. Lehmann 2000)

link is mostly abandoned and the success of the restaurant was short-lived, due to the general economic decline of the neighbourhood, population decline in the 1970s and 80s, crime and deterioration of the social fabric. The terraced site for the restaurant is located at the upper end of the historical street: it's a small ensemble of buildings as a series of commercial buildings for bars, shops and the open-air restaurant. In addition to the renovation of three Baroque buildings. Only a part of the proposal, however, was realised due to the lack of financial viability of the project. Bo Bardi collaborated here with the architect-engineer Lélé Filgueiras Lima, who developed the prefabricated modular ribbed concrete panel system used for construction; the project has a certain roughness and she agreed with Lélé that beauty was of less importance. Today, as part of the renovation program funded through the 2016 Olympics regeneration funds, there are plans to reactivate the Ladeira project and transform it into a revitalised public space (see Figs. 2.9 and 2.10a, 2.10b, 2.11 and 2.12).

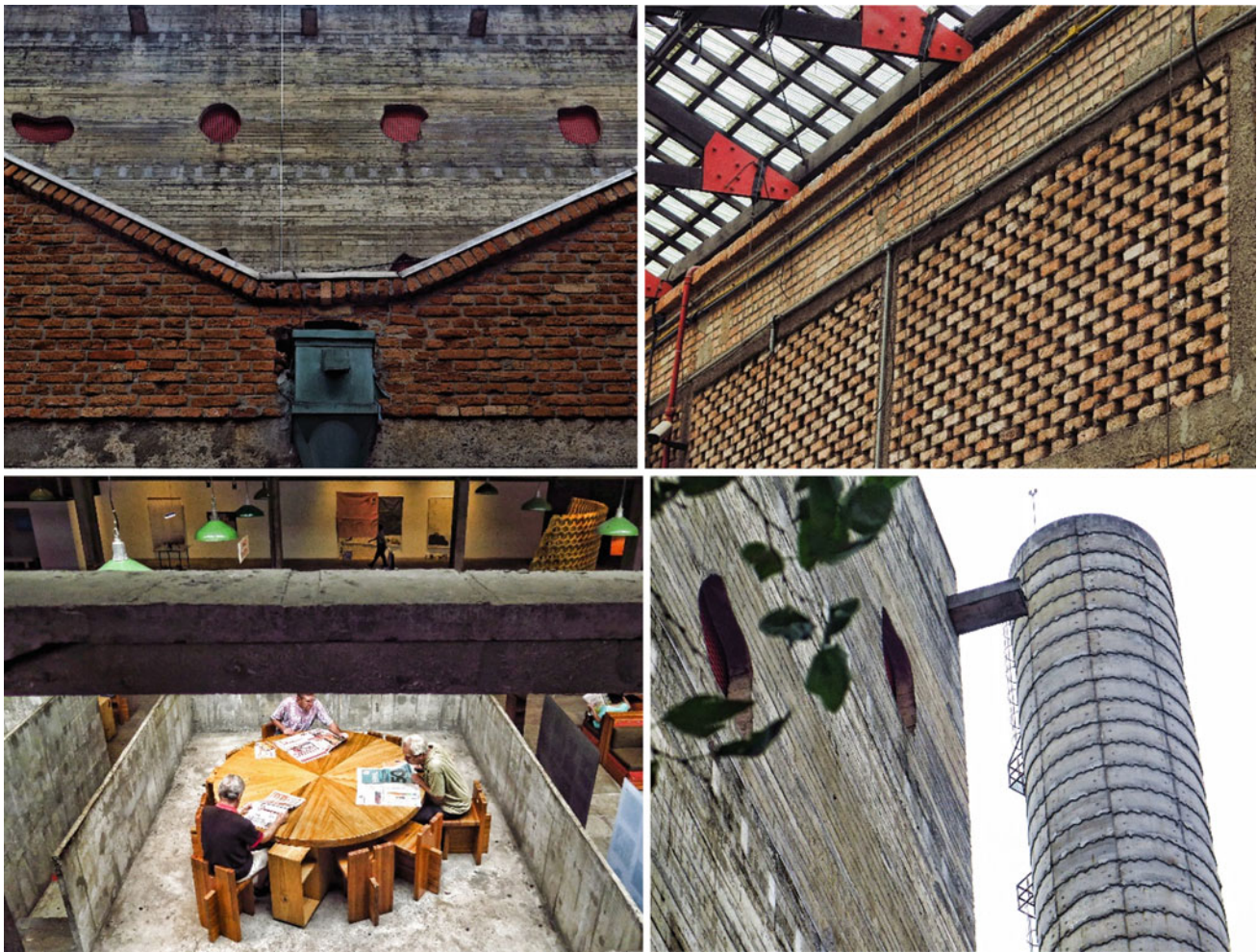
### The Multiplicity of Regional Identity in Bo Bardi's Late Works

In Bo Bardi's works we find acceptance of regional construction methods as one mode of expression to handle the varied topography, introducing ground floor walls with expressive, irregular stonework and the total exposure of structural elements above (for example, the exaggerated concrete super-frame of the MASP in São Paulo, where the structural frame defines the entire brutalist aesthetics of the

building). Her work reveals a range of architectural languages, and here, such diversity can be seen as a pattern of local influences carried over from one project to another and transformed in the process; while her architectural language continually evolved, and this evolutionary aspect is extremely important (Zeuler Lima in AV Monografia 2015).

Constructional form and material character, for instance, were integral to an evolving expression in her architectural work. She was adept at the use of off-form, exposed concrete and the bold simplification of large-span structural ideas. Large concrete structures were common in Brazil from as early as the 1930s building boom, as there were no steel mills at that time (Artigas 1997). The way in which the architectural elements—such as concrete walls, columns and beams—were articulated, from one work to the next, provides a basis upon which to evaluate her work as a whole. She was concerned with the specific appearance of the structural elements, and thus she re-interpreted in concrete the regional tradition of simple articulation of the wall surface (just as in the *Maisons Jaoul* by Le Corbusier, 1954–56).

The new capital city Brasília was seen by some as an example of the failures of top-down planning of mega-projects and pedestrian inconvenience. The sprawling new capital city carved out of the Brazilian savannah became an emblem of both, Latin America's leap into modernity and, later, of the limits of Modernism's utopian aspirations and failure to deliver on its promises. Attending Brasília's inauguration in 1960, the French writer Simone de Beauvoir complained about its monumental civic scale and that all of its *superquadras* exuded “the same air of elegant



**Figs. 2.13 to 2.16** Cultural and leisure centre SESC Pompéia, São Paulo (1977–86), making use of a former factory and extending it with a beton brut tower (Photos Federico Calabrese, 2015)

monotony”. She commented: “What possible interest could there be in wandering about? The street, that meeting ground of ... passers-by, of stores and houses, of vehicles and pedestrians ... does not exist in Brasilia and never will” (12).

Critiques of the Brazilian approach, mainly directed against Niemeyer, were beginning to appear in the *Architectural Review*, which wrote in 1950 that “Brazil’s architects have a quest for novelty, while desperately needed low-cost housing and social improvements are neglected”. Even before completion of this gigantic project, the city of Brasilia, criticism against Brazil’s “superficial architectural style” increased. After visiting the 1953 São Paulo Biennial opening, skeptical comments came from Bruno Zevi, Walter Gropius and Max Bill. In the *Architectural Review*, Swiss architect Max Bill sharply criticised Brazilian Modernism, commenting that it has become “empty formalism, a waste of materials, lacking any structural logic” (Bill 1954, 62). This criticism had significant impact in Brazil and people

started to question the way architecture had evolved in the country.

At the height of her professional career, Bo Bardi became increasingly disillusioned with functionalism and the way Brazilian architecture was developing, especially after visiting the much anticipated completion of the new capital Brasilia in 1960 (Ferraz 1993; Bardi 2012). Questioning such mega-projects, the possibility of building a new city from scratch and what she called the “superficial aestheticism”, she refused to follow the trend of an over-articulated application of technology and formalism as means of perpetuating an inherently wasteful consumer society.

Climatic conditions have often been explored as the impetus underlying regional aspects of architecture (Hitchcock 1955; Banham 1962; Bullrich 1969). While still adhering to functionalist principles in terms of the general layout of the plan, she started to indulge in shallow-pitched roofs and random walls made of local stone. Paying attention





**Figs. 2.17 to 2.20** The Centro Cultural Casa do Benin, the Bahian-African cultural center (Salvador, 1987) (Photos Federico Calabrese, 2015)

to principles of natural cross-ventilation and thermal comfort; here, interiors are shielded from the excessive heat and light of the tropics. At the same time, she remained unequivocally committed to the revelation of twentieth-century building technology: the reinforced concrete skeletal frame and its infill screening or shutters, with a strong interest in social aspects and low-cost housing.

Bo Bardi's output, while small, is significant because of her importance as an architect who respected regional cultures, which became the main drivers of her later works in

Salvador; she nurtured a diversity of design approaches, making every project unique and outstanding (even if simple in its gesture), rather than producing a large number of repetitive projects; her experimental approach ranged from daring construction technology (such as the large-span superstructure of MASP with its 8 m high and 70 m wide public space), to small-scale experimentation with concrete formwork (especially the adaptive re-use projects in Salvador), to careful restoration of heritage buildings (taking the heritage focus of Lucio Costa further into mainstream



**Figs. 2.21 and**

**2.22** Restaurante do Coaty, at the Ladeira da Misericórdia (Salvador, 1987–88), by Lina Bo Bardi and João (Lélé) Filgueiras Lima. (Photos Federico Calabrese, 2015)



Brazilian architecture), thus opening up an alternative way into modernism that makes Brazil such a unique case.

While Bo Bardi had initially participated in the explorations of the modernist generation, subsequently she became a central representative of the critical regionalism approach. Like Luis Barragan at the same time in Mexico City, she refused to simply surrender to the European abstract modernism *a la Bauhaus* (Andreoli and Forty 2004); rather, she tried to develop it further by bringing in the regional character. As a result, her work was not based on sentimental or folkloristic elements. Comparable to Barragan, Bo Bardi is an example of an architect working

with the specific characteristics of the particular place, including the common, local, ordinary and “everyday”, thus creating a language of sustainability. She immersed herself in writing, both culturally and politically, and architectural writing became highly significant to her development as an architect; she wrote more than she built. For instance, in 1947 she began editing the journal of the São Paulo Museum of Art, *Habitat*.

Bo Bardi argued that a country should build identity on the foundation of its own roots, and explored Brazil in order to assimilate and better understand its local and popular cultures, whilst successfully integrating these with social

values of the Modern movement (Araujo 2013). Her concept of an “architecture of social responsibility” has still great relevance today (Anelli 2012).

Her early works—like the Glass House or the MASP, both in São Paulo—were still in a modernist style, keeping up with the international trend. Thereafter, Bo Bardi’s work became increasingly inflected towards the vernacular, influenced by the African slave culture of the north-eastern Brazilian people in Bahia, where she lived for five years. Similar to Mario de Andrade, Bo Bardi developed a passion for this locally rooted culture and for popular art; she wanted to *brasilianise* architecture. For her, “the truth in the vernacular lay forever beyond time because nobody could determine its age” (Bo Bardi 1995, 36); it was timeless. In her writings, she promoted the social and cultural potential of architecture and design, and proposed new parameters for design thinking on adaptive re-use, which included her notions of “historical roughness” and “tolerance to imperfection”. She wrote

We cannot accept, however, that Brazilian architecture is already on its way towards academism, as various foreign views would have it, and nor will it be, for as long as its spirit is in the human spirit and its goal is the improvement of living conditions—for as long as it draws its inspiration from the intimate poetry of the Brazilian land. These are the values that really define contemporary Brazilian architecture.

(first published in the journal *Habitat* 2, January 1951, 32. Quoted from *Stones against Diamonds, an anthology of writings by Lina Bo Bardi*, published by Architectural Association Publications, London; 2012, 26; and ILPMB 2012)

## What Has Luxury Got to Do with Sustainability and the Work of Bo Bardi?

As the cross-cultural significance of adaptive reuse of buildings increases, either due to destruction or gradual deterioration, interest in the idea of sustainability is attracting much attention among scholars in a range of disciplines, specifically cultural history, urban design, and landscape architecture and heritage studies.

Bo Bardi “invented” her own version of sustainability, introduced this concept through her adaptive reuse designs and through ideas about cross-cultures, linking recycled buildings with durability, and ensuring a special user experience within her buildings. Based on the fact that sustainability aims to create ethically correct and deeper value, what has sustainability to do with luxury? There is now a global trend towards a better understanding of sustainability and luxury, and the creation of “luxury as sustainability”. In future, there will be a new forms of luxury, which will be environmentally acceptable, recycled/upcycled and

low-impact/low-carbon, placing an increasing importance on durability and longevity (Condello 2014).

Upcycling means not only clever reuse of space, but also minimising waste and turning the reused building into a luxurious experience. While *sustainable luxury* seems an oxymoron, however, exclusive goods and buildings with sound environmental and social credentials does not have to be a contradictory concept. If we define luxury as a desirable good that is difficult to obtain, than luxury is something that embodies the social and environmental credentials of a building, product or service. As markets mature (including the real estate market Latin America, where buyers have increased expectations), their more affluent citizens increasingly follow international trends. This includes awareness and concern over social and environmental issues, and a desire for the buildings to provide more meaningful experiences.

Bendell and Kleanthous defined authentic luxury as “those goods and products that provide the greatest positive contribution to all affected by their creation and identify their consumers as having the means and motivation to respect both people and planet” (2007, 4). Their report on the luxury goods industry notes “Consumers’ increasing concerns with environmental and social problems are the greatest cultural shift of the 21st century” (Bendell and Kleanthous 2007).

In this context, Bo Bardi can be credited with constructing a new way of thinking through recycling buildings - to consider human interfaces with thoughtful public spaces and their potential for adaptation more critically. Typical for her use of architectural fragments and derelict buildings is the salvaging and recycling of structures by unravelling the cross-cultural spaces (each with their own narratives). In this process it is essential to encourage both the community (consumers/citizens) and companies (developers, architects and designers) to be more aware of the social and environmental aspects of their activities. This will allow for greater public participation in decision making and to establish a shared responsibility for better outcomes.

## Another Type of Modernism

The most relevant work of Bo Bardi might as well be her late work, which introduced urban renewal to Brazil’s derelict historical centres. With the careful renovation of the colonial district in Salvador, the Projeto Barroquinha (executed from 1986 to 1990), she inserted few new buildings (such as the Coaty restaurant) and adaptively reused existing structures in the run-down Baroque district. Here, Bo Bardi collaborated with the musician Gilberto Gil and the French philosopher Pierre Verger, and highlights are the Casa do



Benin and Casa do Olodum, both Bahian-African cultural centers with the insertion of spectacular new staircases.

While in her early work, before 1977, Bo Bardi was still concerned with introducing established modernist ideas into Brazil, in her later work we can find a strong expression of an approach consistent with Carroll's point about the importance of local elements and a wider social and ethical responsibility (Carroll 2004). Bo Bardi's later work (starting with the SESC Pompéia) reveals how she had absorbed and was working with regional characteristics, and elements of vernacular identity (Condello and Lehmann 2016). Her poetic and, at times, rigorous architectural language remained open to the materiality of everyday life, while she never aligned herself with postmodernism or mainstream Brazilian modernism. Starita also comments on the shift of approach in Bo Bardi's work, when she notes: ".....the arguments about vernacular architecture Bo Bardi encountered, how that affected what she built in the first half of her career, and the different approach she took in the second half of her career as an architect, that is, from 1977 until her death in 1992" (Starita 2016, 1).

Architects must focus on how buildings, places and cities really work, how the user fits into the picture, how the existing city can be maintained and up-cycled, and how technical systems are integrated. Bo Bardi's main contribution was to show architecture this alternative way; a pathway towards the appreciation of vernacular cultures and the potential of adaptive reuse, while always respecting the diversity of possibilities. Clearly, if we recycle the building stock we can go further than when we replace and demolish the existing (Girardet 1999).

In "The metabolism of the city: optimizing urban material flow through principles of zero waste and sustainable consumption" (2012), I wrote that "reusing buildings, building components and integrating existing structures in new developments (instead of demolition) is a basic principle of any sustainable project" (Lehmann 2012, 234). Material flow and zero waste concepts are now impacting on urban development concepts, and architects and planners examine opportunities for re-use of modular prefabricated components, design for disassembly, the minimization of cut-offs, and higher material efficiencies, meaning reduction in material thickness and embodied energy, enabling future chains of reuse, and a preference for locally sourced materials. Keeping and upgrading the existing building stock is an important strategy, as the most sustainable building is likely to be the one that already exists (based on its embodied energy, materials and life-cycle considerations).

Bo Bardi is one of the pioneers who introduced the concepts of adaptive reuse and critical regeneration to Brazil, rethinking architecture's potential for social engagement

with the city. Wherever possible, she also reused the authentic material reclaimed from demolished buildings and saw her role as the one of an *Urban Regenerator*. Our first priority ought to be to assure that we reuse older buildings, as the greenest building is the one that's already built – renovating and retrofitting existing districts is, therefore, essential. It becomes obvious that all future eco-cities will have to integrate strategies for integrating existing structures and the adaptive reuse of buildings into their urban planning (Lehmann 2012).

Today, all architecture is global architecture. Sociologist Anthony Giddens argues that "the flipside of globalisation is a return to the local with a revival of long forgotten cultural identities and the vernacular" (Giddens 1999, 86). Of course, there is a certain paradox embedded in the fact that an anti-globalist movement, like regionalism, is seeking to extend itself worldwide. Therefore, a core question today is: how can local character be expressed in an architect's work in times of globalisation? Hereby, the concept of regionality "depends on it being possible to correlate cultural codes with geographical regions", as Colquhoun (1997, 22) pointed out.

With the impact of globalisation since the 1980s, architecture in all countries has become more similar and national differences less recognisable (Zein 1998, 2004; and Frey 2010). Through globalisation, the traditional determinants—local climate, geography, craft traditions and religions—are rapidly losing their importance. One conclusion that can be made is that regional identities, such as those belonging to São Paulo or Salvador, have been strong, dynamic influences on Bo Bardi's architecture. Today such regional influences are still evident and identifiable in some contemporary architects' works, resolutely withstanding the pressures of globalisation, which erodes identity and regional characteristics in the built environment.

However, regionalism's success has sometimes been ambiguous; its critical dimension is still a major influence, while its tendency towards sentimental nostalgia attracts conservatives. Regionalism as the source of authenticity, grounded in place and user, and as introduced by Bo Bardi has contributed to the maturing of architecture in Brazil and the discovery of the culture of the Northeast, an almost mythical region of Brazil; it has given it a sense of identity, which is always "constructed"; it never evolves naturally. The current revival of an interest in identity is obviously the product of a sense of dislocation in a fast-changing globalised world.

Both tendencies, international modernism and regionalism, had an impact on the further development of Brazil's architecture and identity. The idea of a "dynamic regionalism" (Lehmann, 2004) represents the idea of modernism adapted to its locality. Today, it can be seen as an attempt by



a few architects to escape from the low point of global corporate banality and to re-introduce the idea of local building tradition, materials and meaningful typology. Taking into account locality and site, this regionally-inflected approach distinguishes the work of Lucio Costa and Bo Bardi, as much as a Swedish interpretation distinguishes architects such as Sigurd Lewerentz and Gunnar Asplund from the works by the early Bauhaus masters (e.g. Walter Gropius, Mies van der Rohe, Ludwig Hilbersheimer). Their interpretation of modernism was readily seen as differing from Gropius' Bauhaus modernism.

It is therefore revealing to study how modernist ideals were incorporated into a young, fast-growing and ambitious country like Brazil, with a legacy of contrasts and contradictions. The role of Bo Bardi within modernism's evolution is rightly been celebrated today, recognising her unique path and contribution as one of Brazil's most important, multi-faceted architects.

Bo Bardi's work has become increasingly popular among the younger generation of architects in recent years, embracing enthusiastically her work, mainly thanks to a growing interest in projects with a social and cultural conscience. Barry Bergdoll commented in a recent interview on this growing posthumous appreciation of Bo Bardi's work and recommended caution:

There's such a fad for her right now that we run the risk of smoothing over the complexity and the contradictions of her work. She's being elevated to some kind of holistic saint of everything contemporary society stands for now, at the expense of revealing her historical accomplishments and shortcomings. (...) Just because we love the fact that she was a socially engaged, strong female architect, we're now going to make her into the Frida Kahlo of architecture? Hers was a very serious, thought-provoking life, and she deserves to be engaged critically, not to become an object of politically correct reverence. (Bergdoll 2015)

Essentially, I believe it is fair to suggest that there are three different phases in Bo Bardi's work: her pre-Brasília projects (before 1956), post-Brasília projects (after 1956), and regional works (after 1977) are all different in their entire attitude and approach. Here is an architect who constantly evolved and absorbed ideas from the culture of the everyday lives of people around her. However, her influence as a key figure cannot be underestimated in shaping the movement and making significant contributions to the special place of Brazilian architecture in world architecture today.

When the heroic white modernism of the Bauhaus, Le Corbusier and Russian constructivists arrived in Brazil, it was given a distinctively Brazilian interpretation. It was "another modernism" that did not follow the style template of Philip Johnson's International Style (1935), but enriched

architectural production in the second half of the 20th century. The white modernism from Europe was no longer accepted as the only model, in a "one size fits all" fashion, instead a diverse range of other modernisms without dogma emerged, what William Curtis called "the process of absorption" (1982, 491).

## References

- Abel C (1997) *Architecture and Identity*, Oxford: Architectural Press.
- Acayaba MM, Ficher S (1982) Tendências regionais após 1960. In: *Arquitetura moderna brasileira*, São Paulo: Projeto.
- Andreoli E, Forty A (2004) *Brazil's Modern Architecture*, Munich: Phaidon.
- Anelli R (2012) *Lina Bo Bardi in the Frame of Brazilian Architecture*, in catalogue of travelling exhibition "Lina Bo Bardi: Together": <http://linabobarditogether.com/2012/09/18/lina-bo-bardi-in-the-frame-of-brazilian-architecture-by-renato-anelli/>. Accessed 10 December 2015.
- Araújo AL (2013) *Pierre Verger, Negotiating Connections between Brazil and the Bight of Benin*, in: *Luso-Brazilian Review*, Vol. 50:1, University of Wisconsin, USA.
- Artigas RC (ed) (1997) *Vilanova Artigas* (monograph in the series Brazilian Architects), São Paulo: Instituto Lina Bo e P.M. Bardi / Fundação Vilanova Artigas.
- Arquitetura Viva (AV) Monografia 180 (2015) 'Lina Bo Bardi, 1914-1992. Building the Everyday' *AV Monografias* No. 180, Nov. 2015, Madrid (with essays by Zeuler R. Lima, Renato Anelli, Olivia de Oliveira and Guilherme Wisnik); *An Architect committed to Life*, Lima, Zeuler R., p. 12.
- Banham R (1962) *Guide to Modern Architecture*, London: Architectural Press.
- Bendall J, Kleanthous A (2007) *Deeper Luxury: quality and style when the world matters*. Report by the WWF-UK, London: <http://www.wwf.org.uk/deeperluxury/>. Accessed 10 December 2015.
- Bergad LW (2007) *The Comparative Histories of Slavery in Brazil, Cuba, and the United States*, New York: Cambridge University Press.
- Bergdoll B/MoMA (2015) *Latin America in Construction: Architecture 1955–1980*, exhibition catalogue, (Ed.) Barry Bergdoll, Museum of Modern Art (MoMA), New York. Previous exhibitions at the MoMA on Brazilian architecture included Philip Goodwin's *Brazil Builds in 1943*, and Henry-Russell Hitchcock's *Latin American Architecture since 1945*.
- Bergdoll B (2015) The Future was Latin America, interview with Samuel Medina in *Metropolis Magazine*, New York (March 2015). <http://www.metropolismag.com/March-2015/The-Future-Was-Latin-America/>. Accessed 5 November 2015.
- Bill M (1954) Report on Brazil, *Architectural Review* (Oct. 1954), London, 239.
- Bo Bardi L (2012) *Stones against Diamonds. Anthology of writings by Lina Bo Bardi*, Architecture Words Series, London: Architectural Association Publications.
- Botz-Bornstein T (2015) *Transcultural Architecture. The Limits and Opportunities of Critical Regionalism*, Farnham: Ashgate.
- Bruan Y (2002) *Arquitetura contemporânea no Brasil*. São Paulo: Editora Perspectiva.
- Bullrich F (1969) *New Directions in Latin American Architecture*. London: Studio Vista.

- Carroll AB (2004) Managing Ethically With Global Stakeholders: A Present and Future Challenge, in: *Academy of Management Executive*, 18(2): 114–120.
- Cavalcanti L (2003) *When Brazil was Modern: Guide to Architecture 1928–1960*, New York: Princeton Architectural Press.
- Colquhoun A (1997) The Concept of Regionalism. In: *Postcolonial Space(s)*, G.B. Nalbantoglu and C.T. Wong (Eds.), New York: Princeton Architectural Press.
- Condello A (2014) *The Architecture of Luxury*, Farnham: Ashgate.
- Condello A, Lehmann S (2016) “Urban benevolence: Bo Bardi’s recovery projects in Salvador,” Proceedings Society of Architectural Historians Annual Conference SAH’2016, Pasadena, USA.
- Costa ME (1995) *Lucio Costa: Registro de uma vivência*, São Paulo: Empresa das Artes.
- Curtis WJR (1982) *Modern Architecture since 1900*, London: Phaidon Press, 386–391.
- Deckker ZQ (2001) *Brazil Built: The Architecture of the Modern Movement in Brazil*, London and New York: Spon Press.
- Edwards B (2014) *Rough Guide to Sustainability. A Design Primer* (4th Edition), London: RIBA Publishing.
- Evenson N (1973) *Two Brazilian Capitals: Architecture and Urbanism in Rio de Janeiro and Brasília*, New Haven: Yale University Press.
- Ferraz MC (ed) (1993) *Lina Bo Bardi* (monograph in the series Brazilian Architects), São Paulo: Instituto Lina Bo e Pietro Maria Bardi. This comprehensive monography was accompanied with a documentary VHS video produced by M.C. Ferraz and A. Michiles, distributed by the Lina Bo e P. M. Bardi Institute, São Paulo, 1993.
- Ferraz MC (2012) ‘The Making of the SESC Pompeia’, part of: *Lina Bo Bardi Together*. Exhibition Catalogue and exhibition web site. <http://linabobarditogether.com/2012/08/03/the-making-of-sesc-pompeia-by-marcelo-ferraz/>. Accessed 5 November 2015.
- Frampton K (1983) Towards a Critical Regionalism: Six Points for an Architecture of Resistance. In: *The Anti-Aesthetic*, Hal Foster (Ed.), New York: New Press. And in: Kenneth Frampton (1983b) *Modern Architecture: A Critical History*, London: Thames and Hudson, 254–257.
- Frampton K (1995) *Studies in Tectonic Culture: The Poetics of Construction in 19th and 20th Century Architecture*, Cambridge: MIT Press.
- Frey P (2010) *Learning from Vernacular. Towards a New Vernacular Architecture*. Exhibition catalogue, Arles: Vitra Museum.
- Freyre G (1986) *The Mansions and the Shanties: The Making of Modern Brazil*. Los Angeles: University of California Press.
- Giddens A (1999) *Runaway World. How Globalisation is Reshaping our Lives*, London: Thames and Hudson.
- Giedion S (1941) *Space, Time and Architecture*, Cambridge: Harvard University Press.
- Girardet H (1999) *Creating Sustainable Cities*, Green Books, Devon: Totnes.
- Goodwin P (1942) *Brazil Builds: Architecture New and Old, 1642–1942*, New York: Museum of Modern Art, catalogue of the 1942/1943 MoMA exhibition.
- Herrle P (2008) Architecture and Identity? Steppenwolf and the Carriers of Change. In: *Architecture and Identity*, Peter Herrle and Erik Wegerhoff (Eds.), Muenster: LIT-Verlag, 11–22.
- Hitchcock, H-R (1955) *Latin American architecture since 1945*. Museum of Modern Art. Exhibition and catalogue, New York
- Instituto Lina Bo e Pietro Maria Bardi (2012) *Lina Bo Bardi. Together*; Web site, film and catalogue, accompanying travelling exhibition with same title (curated by Noemi Blager), São Paulo. <http://linabobarditogether.com/>. Accessed 5 November 2015.
- Joedicke J (1979) *Architektur im Umbruch*, Stuttgart: Karl Kraemer Verlag, pp. 53–55.
- Johnson P, Hitchcock H-R (1935) *The International Style*, New York: Museum of Modern Art, book following the 1932 exhibition.
- Kamita JM (2000) *Vilanova Artigas* (monograph), São Paulo: Cosac & Naify Edicoes.
- Lara FL (2008) *The Rise of Popular Modernist Architecture in Brazil*, Miami: University Press of Florida.
- Le Corbusier (1930) *Precisions on the Present State of Architecture and City Planning*, Zurich: Park Books.
- Lefaivre L, Tzonis A (2003) *Critical Regionalism: Architecture and Identity in a Globalised World*, Munich: Prestel Verlag.
- Lehmann S (1998) Zum Tode von Lucio Costa, 1902–1998, *DBZ Deutsche Bauzeitschrift*, No. 08, Guetersloh: Bertelsmann, pp. 32–34.
- Lehmann S (2004) *Der Weg Brasiliens in die Moderne: Eine Bewertung und Einordnung der modernen Architektur Brasiliens, 1930–1955*, Muenster: LIT-Verlag.
- Lehmann S (2008) The Work of Vilanova Artigas and Lina Bo Bardi, 1950–1970. Regional Identity and Modern Architecture in the Postcolonial, Brazilian Context. In: *Architecture and Identity*, Peter Herrle and Erik Wegerhoff (eds), Muenster: LIT-Verlag, 321–334.
- Lehmann S (2010) *The Principles of Green Urbanism*, London: Earthscan.
- Lehmann S (2012) ‘The metabolism of the city: optimizing urban material flow through principles of zero waste and sustainable consumption’, in: S. Lehmann and R. Crocker (eds), *Designing for Zero Waste: Consumption, Technologies and the Built Environment*, London and New York: Routledge, p. 309–343.
- Lehmann S (2014) ‘Truth in the Vernacular - Contextualizing the Late Work of Lina Bo Bardi’, in *Lina Bo Bardi 100. Brazil’s alternative path to Modernism*, A. Lepik (Ed.), Hatje Cantz, Stuttgart (English and German editions), Architekturmuseum-Pinakothek der Moderne, Munich, pp. 134–151.
- Lehmann S (2016) ‘An environmental and social approach in the modern architecture of Brazil: The work of Lina Bo Bardi’, *City, Culture and Society*, Jan. 2016. DOI: [10.1016/j.ccs.2016.01.001](https://doi.org/10.1016/j.ccs.2016.01.001).
- Lima Zeuler Rocha Mello de Almeida (2013) *Lina Bo Bardi*, New Haven: Yale University Press.
- McDonough W, Braungart M (2003) *Cradle to Cradle: Remaking the Way We Make Things*, New York: North Point Press.
- McGuirk J (2014) *Radical Cities: Across Latin America in Search of a New Architecture*, Verso Books, 2014.
- Meadows DH, Meadows DL, Randers J, Behrens W (1972) *The Limits to Growth*, Club of Rome.
- Mindlin HE (1956) *Modern Architecture in Brazil*, New York/London: Reinhold/Architectural Press.
- Moore R (2012) ‘Lina Bo Bardi: buildings shaped by Love’, *The Guardian*, London, 9 September 2012. <http://www.theguardian.com/artanddesign/2012/sep/09/lina-bo-bardi-together-review>. Accessed 5 Nov 2015.
- Oliveira Olivia F. de (2006) Lina Bo Bardi: Obra Construida (Built Works). *2G series*, N. 23–24 Barcelona: Editorial Gustav Gili (2003); and *Subtle Substances: The Architecture of Lina Bo Bardi*, Barcelona: Gustav Gili and Romana Guerra Editora Ltda.
- Oliveira, Olivia F. de (2014) ‘Myth, Popular Culture, and Collective Memory’, in *Lina Bo Bardi 100. Brazil’s alternative path to Modernism*, A. Lepik (Ed.), Hatje Cantz, Stuttgart (English and German editions), Architekturmuseum-Pinakothek der Moderne, Munich, pp. 155–167.
- Piccarolo G (2013) ‘Lucio Costa’s Luso-Brazilian Routes. Recalibrating Centre and Periphery’, in *Latin American Modern Architectures: Ambiguous Territories*, edited by Patricio del Real and Helen Gyger, London: Routledge, pp. 33–52.

- Rudofsky B (1964) *Architecture without Architects*, New York: Museum of Modern Art.
- Semper G (1860) *Der Stil in den technischen und tektonischen Künsten*, Dresden: Verlag der Kunst.
- Starita A (2016) *Marvelous Primitivism: Moving towards an ethical use of the vernacular*, Proceedings SAH 2016 Conference, Pasadena CA, April 2016.
- Suzuki M (ed) (1994) *Times of roughness: the stalemate design*, Lina Bo e P.M. Bardi Institute: São Paulo. Part of it republished from Suzuki's doctoral thesis "Lina and Lucio".
- Ward S (2012) 'Breathing life into the corps: upcycling through adaptive reuse', in: *Designing for Zero Waste*, Lehmann, S. and Cocker, R. (eds), London: Routledge, pp. 247–266.
- Whyte W (1980) *The Social Life of Small Spaces*, Washington DC: Conservation Foundation.
- Zein RV (1998) 'Other Brazilian Architectures', in: *2G Revista Internacional de Arquitectura*, No. 8, Barcelona, pp. 14–18.
- Zein RV (2004) Regional Study: Brazil. Paper presented at the International Conference on Architecture and Identity, Berlin, December.



Sustainable Lina

Lina Bo Bardi's Adaptive Reuse Projects

Condello, A.; Lehmann, S. (Eds.)

2016, XIV, 179 p. 170 illus., 142 illus. in color.,

Hardcover

ISBN: 978-3-319-32983-3