PUBLIC SPACE AND MOBILITY.
THE TRANSFORMATION OF MADRID'S DISTRITO CENTRO

distrito centro | MADRID

PUBLIC SPACE AND MOBILITY. THE TRANSFORMATION OF MADRID'S DISTRITO CENTRO

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Technical Services
José Barrado

Junta Municipal de Distrito Centro
Servicios Técnicos
José Barrado

Authors of projects
Jose Javier Bataller
Javier Tejera
BAT Spain
STAD42

http://madrid.es/transformacioncentro

/// EDITORIAL TEAM

Grupo de Investigación en Procesos Urbanos y Territoriales Complejos (LoCUS)
Laboratory on Complex Urban & Regional Spatial Processes (LOCUS)
locuslab.eu
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Escuela Técnica Superior de Arquitectura de Madrid (ETSAM)
Urban and Regional Planning Department (DUyOT)

COORDINATORS
Javier Ruiz Sánchez
PhD in Architecture. Tenured Lecturer. DUyOT. ETSAM

Álvaro Ardura Urquiaga
Architect. Associate Lecturer. DUyOT. ETSAM

AUTHORS OF ARTICLES
Sonia de Gregorio Hurtado
PhD in Architecture. Associate Lecturer. DUyOT. ETSAM

Inmaculada Mohíno Sanz
PhD in Civil Engineering. DUyOT. ETSAM

Iñigo Lorente Riverola
Urban Planning Architect. PhD student. DUyOT. ETSAM

Francisco Javier Lamiquiz Daudén
PhD in Architecture. Tenured Lecturer. DUyOT. ETSAM

Álvaro Ardura Urquiaga
Architect. Associate Lecturer. DUyOT. ETSAM

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Urban Planning Architect

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Figure 1. New footpaths on the Gran Via after remodelling - Source: Madrid City Council

INTRODUCTION

Jorge García Castaño City Councillor for Distrito Centro

The public space is a crossroads where all facets of city life are to be found: conflict and concord, leisure and business, anonymity and representation. The public space, particularly in historical city centres, so charged with memories, is the symbolic theatre of urban society where all kinds of tension flow together. It is no coincidence that the 15M anti-austerity movement, which championed causes ranging from the global to the hyperlocal, was born in Puerta del Sol, the centre of the Distrito Centro district.

In this new political cycle, where the notion of the "right to the city" has once more been raised as a keystone of municipal government, demands on issues related to the public space have mushroomed, and now form one of the principal themes raised in the different participative processes, such as Local Forums and Participative Budgets. Many of these proposals are channelled through the District Council, given its proximity to local citizens. However, at the beginning of the current legislature, the council lacked almost any power. Since then, a new agreement on the distribution of powers, which forms part of the Strategy Plan on Decentralisation has given the districts new tools for addressing those demands.

Many actions, however, cannot be tackled purely within the framework of the district. This is particularly true of measures related to mobility, which by their very nature extend beyond our administrative boundaries. The problem of public space may be more acute in Centro than in other districts, but ultimately this is more a difference of degree than of essence. A simple calculation may suffice to give some idea of the magnitude of the problem: Of the district's total land area of 521.6 hectares, 161.79 hectares comprises public space. Of this, half correspond to roadways, and a very large proportion to parking spaces. The area given over to motor vehicles—often either under-occupied or stationary and empty—is larger than the 77.51 hectares devoted to green zones (42.84 if we exclude Campo del Moro) and vastly more than the total area under footpaths (32.66 hectares). Not only have motor vehicles invaded the surface, precisely in the most open areas they have also taken over the space beneath our feet, hindering the growth of vegetation and water infiltration.

This hypertrophy of the demands of the private vehicle is a pathology that many city centres around the world are now seeking to rectify, amongst them Paris, Buenos Aires, Seoul, Copenhagen, Amman, New York, Oslo, Vienna, Santiago, Beijing, London... and Madrid. The measures being taken range from small, progressive actions to comprehensive policies that affect the entire city. This trend is now inexorable and inevitable. It forms part of a necessary energy transition which we have come to late. Nonetheless, the measures now being undertaken by this council have placed us at the forefront of change in the world.

Two measures, in particular, have earned international recognition, both for their significance and—especially—for their boldness and their symbolic importance. These are the Madrid Central scheme and the intervention on the Gran Via. Madrid Central is fundamental. Although in territorial terms it only affects the Distrito Centro, it is changing travelling patterns throughout the city, especially in the "central almond"

Figure 2. Patio de la Cebada - Source: Ayuntamiento de Madrid

(roughly the area within the M-30 ring road). The change has been immediately noticeable. In many areas, pedestrians have reclaimed the streets. Several studies shows that below a certain threshold (1 vehicle per 60 or 90 seconds), pedestrians regain control of the street. Cars adapt to the new situation, taking on the role of "guests". Madrid Central has made that possible, especially in the more minor streets.

Yet this transformation does not end with the Gran Via and Madrid Central. Other moves range from short-term measures (such as the actions to mark the 400th anniversary of the Plaza Mayor and the tactical planning interventions on Calle del Tribulete and Calle de San Vicente Ferrer) to "harder" works involving varying solutions (such as the complete pedestrianisation of Calle de Carretas, redevelopment of the 11 streets in Chueca with a single road platform and widening of the footpaths on Calle Atocha). To achieve these changes, the City Council (either through the District Council, or the offices of the councillors for Sustainable Urban Development, the Environment and Mobility) has used all the resources at its disposal, despite the budgetary constraint that have restricted other actions, such as further extensions to the cycling network. The result has been a marked increase in the trend towards recovering the street for regular pedestrians—a policy already embarked upon (albeit timorously) by previous administrations, but subsequently renounced by their political successors. We, in contrast, are proud of this work, and will continue to work along the same lines. Other projects that remain to be completed in the near future include the intervention in the Plaza de Jacinto Benavente, the junction between Calle de Carretas and Atocha, and the action in the Plaza de España.

One of the purposes of this publication is to provide technical information on the actions undertaken, so that they can be appraised and assessed by future researchers. In this regard, it is similar to other publications released by the Department for Sustainable Urban Development, such as "Egalitarian Cities" and the "Urbanism & Urban Design Guide. Madrid 1900-2010". However it is also a means of providing a window to the world. Like the Urbanism and Urban Design Guide, the text includes an English translation (in this case, a separate digital version), which will go some way to making up for the dearth of specialist publications on planning in Madrid for foreign readers.

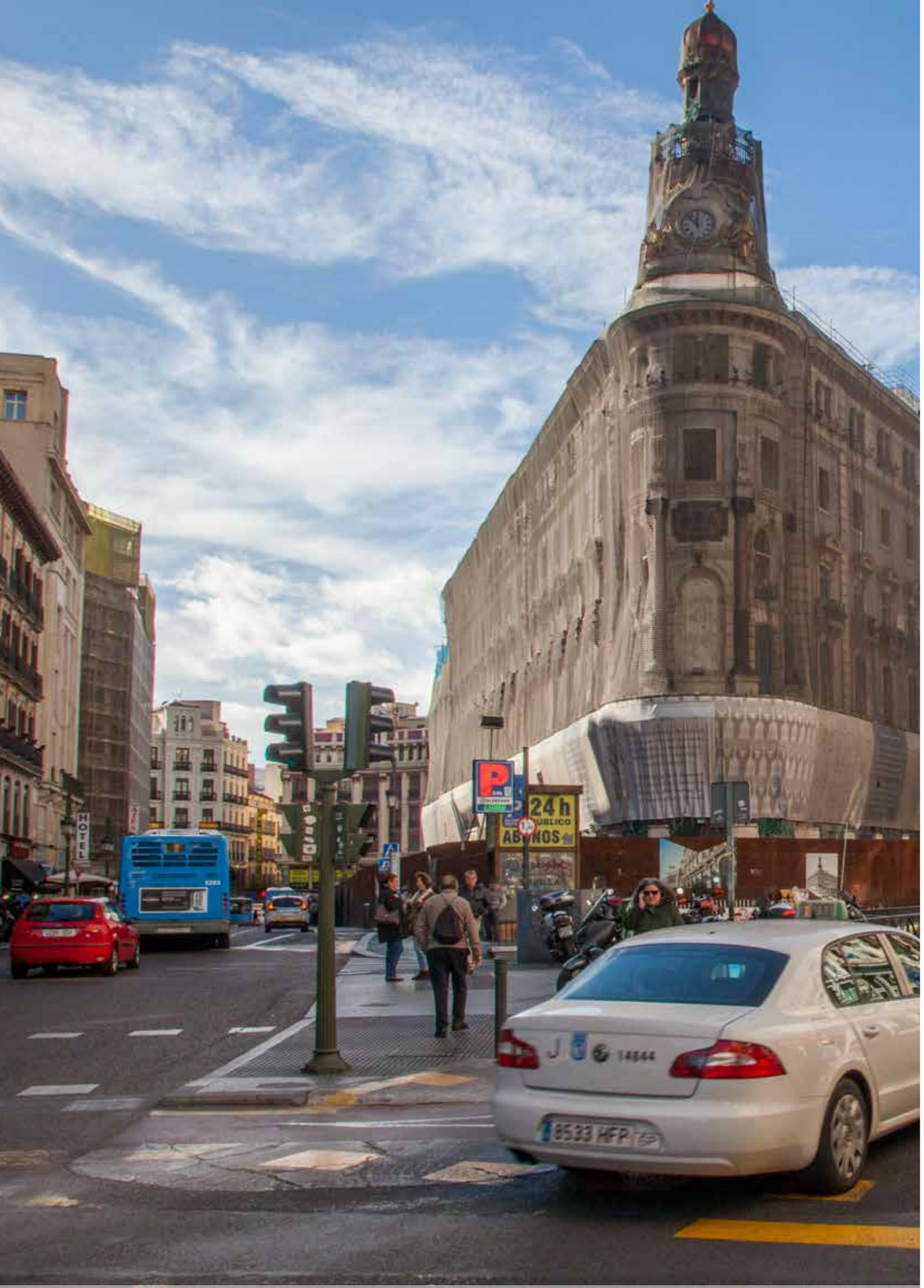


Figure 3. Junction of Calle de Alcalá and Calle de Sevilla - Source: Authors

PURPOSE OF THE RESEARCH

CAP: 2

In recent years, the central district (Distrito Centro) of Madrid has undergone a profound transformation in planning and mobility. Actions such as the pedestrianisation of major shopping streets such as Calle del Arenal, Calle de Fuencarral and Calle de las Huertas; the creation of the Calle Mayor-Calle de Alcalá cycling route; and the introduction of four Resident Priority Areas (RPAs) clearly reflect the city council's commitment to making the district more liveable and this is a goal that has been shared by all administrations, regardless of their political orientation.

A number of other actions pursuing the same goal are currently underway. Projects such as redesign of the Plaza de España and remodelling of the Chueca neighbourhood and initiatives (some controversial) planned under the umbrella of the Air Quality Plan, are intended to improve accessibility, promote sustainable mobility and reclaim the public space for local people. In short, the aim is to make the central district a more "habitable" district.

Nonetheless, there has been no clear strategy guiding this transformation. It has not been set out in any one planning document; rather it has taken the form of a series of partial or isolated—and sometimes mutually counterproductive—actions. Similarly, the unwanted or unplanned consequences of these actions have not been monitored. There is therefore a clear need for an assessment of the consequences of these actions, both with regard to aspects related purely to mobility and above all in the alteration of the cultural landscape of the city, with changes in the uses and representations of public space and their relationship with the architectural framework.

The aim of this research is therefore to provide a document summarising the transformation of the public space with regard to mobility, in order to establish certain strategy lines related to the central city model. Specifically, it will involve analysing and systematising documents and secondary data from a range of sources, given that powers in this area are also widely distributed.

In geographical terms, the study covers the entire Distrito Centro, as well as other actions that affect it, since mobility clearly has implications on a much wider territorial scale, extending beyond the administrative reach of any one district. As for the timeframe, the analysis will focus on the last twenty years, although reference will also be made to key actions carried out before this period.

The diagnosis will provide enough information to design the strategy lines on transformation of the public space and mobility in the district and in the so-called "central almond" of Madrid, including guidelines on application and indicators for assessment On conclusion of the study, a final report will be added and it will be presented to the public as part of a debate seminar.

Figure 4. Calle Mayor - Source: Authors

CONTEXT OF THE DISTRITO CENTRO

CAP: 3

In this section, we shall briefly outline some of the key features of Madrid's central district, the Distrito Centro. The relatively large area. With the exception of the Retiro Park, the area closely coincides with the walled city of King Philip IV and reflects the preindustrial (but not medieval) street plan. In the 1990s, when the General Planning Scheme was being reviewed, the historical quarter covered an area of 5.23 square kilometres had up to 150,000 residents. In land area, it was 4.5 times larger than its Munich equivalent (which had a population of just 4,000) and nearly two and a half times that of Bologna, with 70,000 inhabitants. To take a closer reference point, the analogous district in Barcelona, Ciutat Vella, currently covers an area of 4.49 square metres and has around 107,000 inhabitants.

In overall terms, the population of the Distrito Centro is in decline. Following an initial fall in the population in the 1990s (from nearly 148,000 in 1990 to 126,000 in 1998), over the last 10 years it has decreased by a further 11.4%. Since the decline began in 2006, the number of inhabitants has gone from 149,718 (the most recent peak was 150,159 in 2004) to 132,644 in 2016, following a slight recovery over the last year. More than 17,000 fewer inhabitants. This means that Centro has gone from being the second most densely populated district (after Chamberí, still the most populated despite an 8.70% fall) to being the fourth, after Salamanca (which also experienced a 5.89% fall) and Tetuán (where the population has remained unchanged). In a close fifth place is Arganzuela, the only district entirely contained in the "central almond" to see a rise in population (albeit by a modest 1.83%) which now has a density of 234 inhabitants per hectare (around the average for the Central Almond)[1].

The district's population distribution and trends are quite uneven. The two most populous neighbourhoods—in absolute terms and in density—are Embajadores (43,510 inhabitants and 221 first homes per hectare in 2011 according to the 2011 census) and Universidad (33,530 inhabitants and 185 homes per hectare according to the 2011 census). All neighbourhoods except Justicia display relatively low densities for the urban fabric of a historical centre: in 2011, Palacio had 84 dwellings per hectare, Sol 88 and Cortes just 81.

The neighbourhood that has seen the sharpest decline in population is Sol, with a fall of 15% since 2006, as compared to 12.7% in Universidad and Embajadores. Nonetheless, in Embajadores and Justicia the decline appears to be speeding up and the greater part of the population loss has occurred in the second five years of this period.

There are several reasons for this decline in the population of Distrito Centro. The start of the economic downturn saw a fall in the number of foreign residents, particularly as a consequence of the poor economic and labour situation; even so, they continue to represent 28% of the total population, well above the average for the city as a whole. Another important factor has been the rise in home rental and purchase prices: according to an index prepared by Idealista, the city as a whole, and certain districts such as Retiro

1 Some of the text on demographic figures reuses material by Ardura (2017)

Figure 5. Carrera de San Jerónimo - Source: Authors

and Tetuán, have now reached record prices, outstripping even the 2007-2008 peak, while others such as Centro are seeing major year-on-year rises—up to 16.5% to EUR 16.9 per square metre, close to the late-2007 ceiling of EUR 18.0.

Other factors are helping to reinforce the trend; a scarcity of amenities and facilities (very significantly, there is a major shortage of public junior schools), the loss of local retail establishments and a concentration of metropolitan, state and global institutions are all combining to force out the low-income population—including both Spaniards and foreign nationals from poorer countries—and certain ways of life, which are being pushed towards the outskirts and the greater metropolitan area.

Specifically in terms of free public space, like most historical centres, Distrito Centro has a network of narrow streets, which are not well-suited to vehicle traffic; in many cases the situation is further exacerbated by steep hills (in Calle de Segovia, Calle de Lavapiés and Calle de las Huertas, for example). Nonetheless, nearly one third of the district's land area is free space (i.e. not in individual plots), although of this 77-hectare area, the great majority is concentrated in the south-eastern perimetral crown, in Campo del Moro, Atenas Park, Vistillas, Cornisa, part of Madrid-Río, etc. At the other end of Distrito Centro, the 'valley' of La Castellana forms a linear green zone.[2]

Some of the key figures are shown in the table below.

District

521,6 Ha

Land Area in Individual Plots

359,81

Green Zones (GZ)

77,51

GZ not including Campo del Moro

42,83

Footpaths

32,66

Free Space

161,79

Roadway

86,30

Pedestrian

75,49

Outdoor seating

1,56

More than 50% of the free public space is devoted to roadways

The surface area in Green Zones is less than 50% of that devoted to roadways

5% of the total footpath area is used for outdoor (bar and cafe) seating areas

Bearing in mind that access to Campo del Moro is very limited (although attempts are being made to improve this situation with the creation of new entrance and the Bonaparte tunnel), barely 43 hectares can be considered to be fully accessible (although others areas are also closed at night, such as the Casino de la Reina park, currently being renovated).

Moreover, many of these areas (Vistillas, Cornisa) have steep gradients that prevent them being used for anything other than vegetation.

Thus, although the ratio of green zone to population in Distrito Centro (41.37 m2 per 1000 inhabitants

2 Most of the material on the public space is taken from another work by the same editorial team. GIPC (2017)

Figure 6. Ópera - Source: Authors

according to provisional figures from the PEZVAB)[3] is higher than in other districts (Chamberí has the lowest ratio), the green zones in the district suffer from problems of resident proximity, and in the more central zones, there are also problems of usage congestion, due to the very large floating population.

Of the **central green zones**, with greatest accessibility, the great majority (Plaza Villa de Paris, Plaza del Arquitecto Ribera, Plaza de Santa Ana, Plaza de Campillo, Plaza de Pedro Zerolo, Plaza del Rey, Plaza de Nelson Mandela, etc.) have been profoundly altered by the construction of underground car parks, which greatly limit the possibilities for planting trees and shrubs. In some cases, the situation is made even worse by the way the layout of the space has been distorted by the construction of access ramps to the car parks (Descalzas-San Martín and Benavente). In others, the actual design (sometimes very recent), has relied excessively on the "hard" square concept, creating very hostile environments (this is the case of the Plaza de Soledad Torres Acosta, and—although with no underground parking—Plaza del Callao and Puerta del Sol as well; the particular case of the Plaza Mayor deserves to be addressed separately)[4]

As the above figure shows, the area devoted to **roadway** (86 hectares) is greater than either zoned green areas (77 hectares) or pedestrian zones (75 hectares). It is easy to imagine the effect of this distribution of space on the environmental quality: even assuming a dramatic reduction in motor traffic, and ignoring for a moment the effect of emissions, the extremely large area of hard, impermeable and heat-accumulating surfaces inevitably tends to multiply the heat island effect in the city. This aspect is not insignificant, especially given that Madrid's climate and summer temperatures are factors that limit pedestrian and bicycle mobility, which should be at the top of the modal pyramid. Hence the importance of introducing more shade, mainly in the form of trees (given that it is planned to further reduce parking spaces), especially on the new pedestrian routes. The PEZVAB, too, has the potential to make a major contribution in this regard.

Of the area under roadway, a very significant proportion is given over to **parking spaces.** This presents a low-cost opportunity for changing the public space. In November 2018, the first phase of Madrid's Zero Emissions Central Area (known as "**Madrid Central**") came into force and the scheme became fully operative in January 2019. By essentially banning non-resident traffic, it has led to the end of blue parking zones under the Regulated Parking Service (Servicio de Estacionamiento Regulado or SER). Some of these zones have been recycled for use as green zone parking for residents, including loading and unloading spaces, and roadside parking spaces for motorbikes and mopeds (which are not restricted). However, some of the remainder could be used for other activities, some of which currently take up space on the footpath— BiciMad bike parks, refuse containers, etc.

The demand for roadway parking places is therefore restricted to vehicles registered in the neighbourhood and other authorised vehicles. Over the last decade, there has been a dramatic fall in the number of private cars registered in the district; in 2016, the number of cars associated with private individuals was 36,665, just 72.45% of the figure for 2007 (50,604). If we also include cars registered to companies and organisations, the trend is even more spectacular, with the figure for 2016 (44,121) representing just 63.66% of that for 2007 (69,312). There has been a decline (albeit smaller) in the number of mopeds, while the number of motorcycles has risen spectacularly: 8,868 in 2016 compared to 6,169 in 2007 (up 43%).

3 Plan Estratégico de Zonas Verdes, Arbolado y Biodiversidad [Strategy Plan for Green Zones, Trees and Biodiversity], currently being drawn up by the Environment Area. The amount of green zones shown in the PEZVAB is different to that given in the PDEP, since on the one hand the PEZVAB does not include Campo del Moro, while on the other it does include areas that are not zoned as green areas, such as urban allotments, garden infrastructures and what it calls "green streets", which make up an additional 7 hectares.

4 See Ardura (2014)

Figure 7. Puerta del Sol - Source: Authors

The decrease in the number of vehicles is much sharper than the fall in population over the same period (the 2016 population was 93% that of 2007), while the number of homes has increased slightly (by 3%). This means that there has been a fall in the motorisation rate from 0.78 vehicles per home in 2007 to 0.56 in 2016 (compared to figures of 1.18 and 0.94 respectively for the entire municipal area of Madrid); and from 35.80 private cars per 1000 inhabitants at the beginning of period to 27.64 in the final year (44.03 and 37.43 for the city as a whole)

There has also been a significant increase in the proportion of locally registered vehicles bearing the SER marking (the principal indicator that they are street-parked), from 22% in 2007 to 41% in 2016.

This appears to be the result of two simultaneous factors: a shift towards smaller households; and the application of traffic constraints, with progressive implementation of the different RPAs. This trend is likely to increase further with the launch of electric vehicle rental and carsharing firms.

Taken together, the decline in the population and the fall in the number of vehicles, plus the constraints resulting from the RPAs have helped to ease the vehicle pressure on the public space. Nonetheless, until the Madrid Central scheme was rolled out throughout the whole of Distrito Centro, there were significant areas with no restrictions on non-residents (Chueca, Malasaña and La Latina, mainly), where there was a clear contrast with regulated zones.

Figure 8. Parklet at the junction between the remodelled Gran Via and Calle de Alcalá. Source: Ayuntamiento de Madrid

STAGES IN THE REDEVELOPMENT ACTIONS

Francisco José Lamíquiz and Álvaro Ardura Urquiaga

Over the last five decades, some of the most investment-heavy—and certainly the most visible—policies undertaken at city scale in Europe have involved intervention in the public space of historical urban centres and refurbishment of the built environment—independently of their heritage value and the different types of renovation involved. (Some examples can be found in the 'International Comparisons' of this book). The same trend can also be seen in the central district of Madrid, Distrito Centro, where the city council has carried out a large number of projects since the early years of democratic government in the late 1970s[1].

It is important to stress the positive and negative aspects of the different redevelopment schemes. The projects have been widely viewed, by both government authorities and independent sources[2], as an essential feature of the regeneration of downtown neighbourhoods and in particular the Distrito Centro. On the other hand, it has also become clear that the material improvement of the public space can fuel the gentrification of central areas[3].

In the following analysis, these actions have been grouped into five stages. For reasons of space, only the three most recent are discussed in detail here. These stages are as follows[4]:

- The first stage, predating the restoration of the democratically-elected city council in 1979, saw a predominance of actions designed to favour motor transport.

- The second stage, from 1979 to 1990, contrasted in some ways with the earlier phase, and was dominated by isolated refurbishment actions, essentially in city squares, and the first moves to refurbish residential and monumental buildings.

- The third stage, from 1991 to 1995, marked the beginning of large-scale redevelopment, prior to the implementation in 1994 of the Protocol of Cooperation for Refurbishment of the Historic Centre and Peripheral Neighbourhoods in Serious Process of Urban and Architectural Deterioration, signed by the Ministry of Public Works, Transport and Environment, the Regional Government (Comunidad) of Madrid and the City Council.

- The fourth stage, between 1996 and 2000, saw implementation of the greater part of the protocol, and major activity related to comprehensive refurbishment and the Preferential Refurbishment Area

1 LÓPEZ DE LUCIO (1999), for example, argues that in the 1980s and 1990s, redevelopment of the city-centre public space "may be seen as the most significant economic and planning effort in the capital after the enormous development in the decades following the 1859 enlargement (Ensanche) project".

2 As the UN-Habitat's database of best practices notes for refurbishment of the urban centre of Madrid: ...The renovation and improvement of urban streets is essential as the starting point of intervention activities, because an improvement in citizens' quality of life must be both internal (in homes) and also in the shared residential environment."

3 As a mechanism of "domestication" and "normalisation" of these territories (SORANDO and ARDURA, 2016)

4 This text is takes as its starting point an update of the research by one of the authors, LAMÍQUIZ (2006)

Figure 9. Plaza Mayor prior to the 1967-1969 remodelling - Source: Photograph courtesy of Ayuntamiento de Madrid - Source: Department of Historical Heritage

Figure 10. Plaza Mayor following the 1967-1969 remodelling - Source: Photograph courtesy of Ayuntamiento de Madrid - Source: Department of Historical Heritage

(later known by other names, including the Comprehensive Refurbishment Area), with additional injections of European aid and private capital. The leading players in this phase were the Municipal Housing Company and the Municipal Planning Management Office;

- Finally, the present stage, began with the drafting of the "Plan for Urban Remodelling of the Historical Centre of Madrid" by the Urban Planning Area in 2001. The aim of this plan was for the first time to address the entire area of the historical centre. Over subsequent years, the intensity of these actions has varied, as discussed below.

Actions prior to 1979

The primary feature of this stage, before the creation of a democratically elected municipal government, was the predominant importance given to private motorised vehicles in determining the actions to be carried out in the public space. Earlier iconic actions in the Central District had included remodelling of the Plaza Mayor, and pedestrianisation of Calle Preciados.

Today's Plaza Mayor is the result of a large number of interventions over its (recently commemorated) 400-year history[5]. One result has been the gradual removal of the abundant vegetation to be found in the square in the nineteenth century. From 1877 to 1956 the Plaza Mayor was the terminus for several tram lines. After the trams stopped running, ground-level car parking was maximised, sharing the space with market stalls. The last great remodelling of the Plaza Mayor came between 1967 and 1969 when it was closed to traffic and a large underground car park (still extant) was built, with around 900 places. This led to the raising of the ground level in the square and the construction of a complex system of tunnels channelling traffic from Calle Atocha and Calle Toledo to Calle Mayor. The paving stones that still grace the square today were laid at that time, and the few remaining plants were removed.

This project was clearly designed to bring more motor traffic into the quarter, on the grounds that the historical centre should not be left behind in the growing process of motorisation of the city. In terms of the urban landscape, the alterations meant removing the late nineteenth-century design of an "ordered bourgeois square" divided into four parterres, with road traffic around the perimeter (a feature which had remained even after the removal of the parterres) and replacing it with the current rough chequered paving to be seen today, which some commentators saw as restoring "the grandiose scale of the original design"[6]. The removal of the final trees and shrubs from the square, and with it the last shaded areas in the central zone, set a pattern for "hard" intervention that was replicated in later actions. As a result, although the new space was nominally designed for pedestrians, passers-by were gradually replaced by visitors and tourist-oriented commercial activities, and the square came to be dominated by outdoor bars and cafes, only occasionally acting as a venue for fairs and fiestas.

Subsequently, under a programme of architectural adaptation designed by architect Francisco Pol, which formed part of the Priority Refurbishment Area scheme, the facades were renovated, and new frescos were added to the Panaderia house (Carlos Franco). Together with the four new benches/streetlights and the existing statue of Philip III, the square in its present incarnation was now complete. During the era

5 For more information (in Spanish), see the official website of the Plaza Mayor centenary https://plazamayormadrid4c.es/historia-de-la-plaza-mayor/

6 GUERRA DE LA VEGA (1984)

Figure 11. Calle de Preciados (1916-1927) - Source: Museo de Historia de Madrid

Figure 12. Calle de Preciados before pedestrianisation - Source: Museo de Historia de Madrid

Figure 13. Calle de Preciados before remodelling - Source: Museo de Historia de Madrid

of the Distrito Centro Office—created during Alberto Ruiz-Gallardón's first term as mayor—a series of proposals were made for improving the square, under a team led by architect Carlos Ferrán (which were not carried out), as well as other more minor actions in partnership with the Plaza Mayor traders' association, also designed by Francisco Pol. Finally, to mark the fourth centenary of the square, a large circular lawn area was temporarily installed, almost as a symbol of the recovery of public spaces for non-commercial recreational use.

The other large-scale action from this period was the pedestrianisation of a section of Calle Preciados between Calle de Callao and Puerta del Sol, followed later by the parallel Calle del Carmen. Calle Preciados had also previously formed part of the tram network, until it was turned into a one-way street (towards Puerta del Sol), following the creation of shopping malls. The alterations to Calle Preciados in 1969 attracted criticism from traders, who thought it would negatively impact their business. This is an argument often raised against pedestrianisation schemes. However, its only empirical basis is the inevitable impact on sales during the time the alterations are being carried out. Business on Calle Preciados has actually increased (according to a recent report by BNP Paribas, there are no vacant premises on the street). Indeed, it now has the highest rents per square metre of any street in Spain, outstripping even the "golden mile" of Calle de Serrano and Calle de Ortega y Gasset.

It was also during this period that a system of overpasses was around the perimeter of Distrito Centro. Road engineering on the Glorieta de **Atocha** in the 1970s had a detrimental effect on the urban landscape, as the roundabout had to be adapted to constant increases in traffic. Construction of an interchange (popularly known as the "Scalextric") created an overhead junction between north-south traffic (on Paseo del Prado/Paseo de las Delicias and Paseo de Santa María de la Cabeza) and east-west traffic (Calle de Atocha-Avenida Ciudad de Barcelona). Even more than the alterations to the Plaza Mayor, the Scalextric symbolised the hegemony of the automobile, and as we shall see in the next section, led to an equally symbolic demolition operation.

THE FIRST STAGE OF THE DEMOCRATICALLY-ELECTED CITY COUNCILS. ISOLATED ACTIONS 1979-1990

The process of large-scale transformation of downtown Madrid began in the 1980s, under the first democratically elected councils. The Madrid General Planning Scheme was finally approved in 1985, but some of its component projects had already begun during the first term (1979-1983). Its very apt slogan was "Recover Madrid". This transformation not only affected the public space. In its earliest phases, it also played a very important role in kicking off residential (or "private")[7] refurbishment, especially of some of the most outstanding buildings in central Madrid and those of greatest heritage value.

During this initial stage, many iconic buildings in the historical centre underwent very varying degrees of renovation, normally involving a change in use, with an emphasis on cultural activities[8].

7 According to Ayuntamiento de Madrid E.M.V. (1999), following initial attempts beginning in 1982 to encourage the refurbishment of the problematic residential stock in the historical downtown area, in 1985, jurisdiction over refurbishment was transferred to the Municipal Housing Company [Empresa Municipal de la Vivienda], which proved more successful.

8 As highlighted in one of the council's programmatic publications from the period, Proyecto Madrid 1983-1987, in LÓPEZ DE LUCIO Ed. (1999)

Figure 14. Puerta del Sol before the 1980 redesign (1962) - Source: Museo de Historia de Madrid

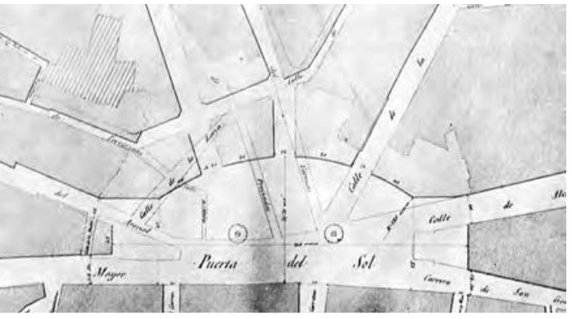


Figure 15. Original 1854 design (Lucio del Valle) - Source: López de Lucio et al (2016)

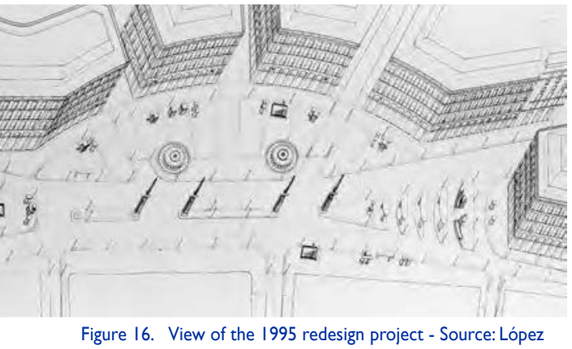


Figure 16. View of the 1995 redesign project - Source: López de Lucio et al (2016)

Figure 17. Puerta del Sol following the redesign of the 1980s - Source: López de Lucio et al (2016)

A publication from this period, 12 Actuaciones para Madrid[9], lists twelve key structural projects for the city. As well as interventions such as the closure of the M-30 with the Avenida de la Ilustración and the southern by-pass, it includes four operations in the historical centre, all of which serve to illustrate the overall context of development of the public space in the central district: "Restriction of traffic in the centre", "Planning of the Puerta del Sol", "Operation San Francisco el Grande" and "Operation Atocha".

Although the last three are best known, the first, "Restriction of traffic in the centre", is of particular interest for this publication. It includes actions which—reversing the previous trend for the first time—were designed to prohibit or restrict the use of private cars. These affected a significant number (eleven) of the main squares in the centre, which were listed as specific targets of action for the period 1984-1987: Plazas de las Comendadoras, Plaza de las Guardias de Corps, Plaza de la Encarnación, Plaza de Ramales, Plaza de Santiago, Plaza del Biombo, Puerta del Sol, Plaza de la Provincia, Plaza de la Santa Cruz, Plaza de la Paja, Plaza de los Carros, Plaza de Tirso de Molina, Plaza de Lavapiés, Plaza de La Corrala-Agustín de Lara and Plaza de Atocha[10] . With the exception of Puerta del Sol and Plaza Atocha, all of these actions were relatively limited in scope, involving little more than "urban microsurgery", in a process that was being mirrored almost simultaneously in Barcelona's Ciutat Vella, during the lead-up to the 1992 Olympics, under the leadership of architect Oriol Bohigas.

These operations included partial pedestrianisation of the Morería and Santiago neighbourhoods, as well as a small number of reforms to more minor streets, which nonetheless stand as an eloquent "statement of intent", prefiguring later trends.

Probably the most significant of all of these actions was the redesign of the **Puerta del Sol** under a multidisciplinary team comprising Riviere, Ortega, González Capitel, Soria Puig and Nebot and directed by Lucio del Valle and Herrero Palacios. The project involved a comprehensive redesign of the square, from traffic organisation to finishes, and it set an important precedent. Private vehicles were banished from the centre of the square by removing the roundabouts, and priority was given to pedestrians who, in contrast to the Plaza Mayor design, colonised the new space from the outset, turning it into an area for rest and recreation. It is also worth highlighting that outdoor bars and cafés have traditionally been banned in Puerta del Sol.

The Gran Via de San Francisco constituted the great internal reform operation of the second half of the twentieth century in the traditional quarter of central Madrid. The route had already been plotted in the Internal Reform Scheme, drawn up by the City Council in 1933 and it was subsequently incorporated into the General Plan of 1946 (commonly known as the Bidagor Plan). It finally opened in 1961. It marked the north-westerly extension of the three rondas (Ronda de Atocha, Ronda de Valencia and Ronda de Toledo) running along the south side of the walled city of King Philip IV, linking with Calle Bailén. By way of the viaduct on Calle Segovia (built in 1930 to replace a previous metal structure dating from 1874) it provided new access from the south to the Plaza de Oriente and the Palacio Real, and with the operation on Plaza de España, completed the southern ring road.

9 AYUNTAMIENTO DE MADRID (1985) 12 Actuaciones para Madrid. Colección Temas Urbanos nº 8, Área de Urbanismo e Infraestructuras, Madrid.

10 It was during this period that "Espacios públicos en el casco histórico de Madrid..." ["Public Spaces in the historical centre of Madrid..."] (BUSTILLOS, I., LASHERAS, C. MARTÍN, M.A., 1985) was published. Commissioned by the City Council of Madrid and the Ministry for Public Works and Planning, the book analyses the history and current situation of the squares in the historical centre

The operation radically altered the existing street plan, and the significant number of buildings demolished in the process left a series of derelict sites on either side of the new street which remained empty for decades. In an attempt to heal tis wound in the urban fabric, in 1982 the council held a competition for designs, which was won by Juan Navarro Baldeweg. Over the following 15 years, his solution was largely implemented, with some minor alterations. His project involved changes to the square immediately in front of the church of San Francisco, integrating the final design of the public spaces on the road, with a very interesting linked series of small spaces along the eastern side in the area of the La Paloma church as far as the Puerta de Toledo roundabout.

The intervention on the Carlos V roundabout, better known as Atocha, extended beyond aspects related merely to the public space. Construction of the new Chamartín station (1972-1976), in the north of the city, had temporarily reduced the rail service at the old Atocha station (built by Alberto del Palacio in 1888-1892) to minimum levels. Moreover, this highly important road hub had been completely disfigured by the intervention in the 1970s with the construction of overpasses. Consequently, one of the structural operations included in the General Plan of 1985 involved complete remodelling of the roundabout, with the removal of the "Scalextric"—which formed a real urban barrier—and the associated construction of the main public transport hub at Atocha station. The interchange would house long-distance trains towards the south of the Peninsula, including the new high speed line to Seville (the AVE), finally opened in 1992 and later to Barcelona; the Metro—with a new Line 1 station—and suburban rail (practically all lines, connected through the existing La Castellana tunnel (known popularly as the "tunnel of laughs") and the converted Green Rail Corridor (the southern rail belt to Arganzuela, now running underground). At the end of the 1980s, the "Scalextric" was demolished and the square remodelled (to a design by architect Antonio Fernández Alba, who was also involved in refurbishment of the nearby San Carlos hospital for use as the Reina Sofía Museum). It symbolised the recovery of the urban landscape and the public space, in clear opposition to the former prevailing planning policy which prioritised private vehicles. As well as the Green Corridor, the operation also included the incorporation of the former industrial district of Arganzuela into Madrid's "central almond". This was the first step towards the connection to other lower-income areas in the south, all slated (in theory at least) for greater attention under the 1985 General Plan. The operation resolved the traffic issue by means of an east-west tunnel (Ronda de Atocha-Avenida Ciudad de Barcelona). An international competition of designs for remodelling of Atocha station and construction of the interchange, was won by Rafael Moneo in 1984. The interchange, which was opened in 1991, created a new public space, with the restoration of former railway buildings as climate-controlled indoor gardens.

To sum up, during the 1980s, actions involving redevelopment of the space were mostly isolated in nature and tended to focus on the special, more high-visibility areas of Distrito Centro—its squares. Generally speaking, they presaged a new role for pedestrians, and by extension for cars, in the historical centre. Many of these squares were redeveloped once more in later phases.

Second stage. The first operations of comprehensive refurbishment 1991- 1995

This second period saw a shift away from isolated operations (indeed, the term "operation" accurately reflects their quasi-surgical nature), which tended to be quite small in scope, even in the most significant examples such as Puerta del Sol and Atocha, to more extensive interventions. This began a 30-year process which was to lead to a practical renovation of the public space in the district.

These larger-scale actions began with conservation and improvement of the public roadway, making the so-called "Asphalt Operations" an iconic and almost traditional feature of life in the city (throughout Madrid, 706 streets and 2,763,496 square metres were affected in just four years, with 387,953 square metres of inserts in road surfaces and 306,363 m2 in footpaths, of which 38,352—almost 10%—and 24,430 square metres were in Distrito Centro). Some of these re-laying operations lacked a critical approach, leading in some areas to the removal of the traditional paving (for example, in the area around Calle Toledo and Calle San Francisco El Grande), which had offered better bioclimatic performance. Major investments were also made in renovating street furniture and making architectural alterations to improve access for people with reduced mobility. The installation of street furniture for advertising (known popularly as the "chirimbolos" (thingamajigs), which had a major impact on the urban landscape, proved particularly controversial, and marked the beginning of a gradual loss of space for pedestrians in their natural habitat, the footpaths.

Other significant actions on streets in the area between 1991 and 1995 included remodelling of the Plaza del Callao and the area around the Cebada Market; conditioning of the Vistillas gardens and refurbishment of the granite features on the Paseo del Prado.

The most iconic redevelopment in this second period, however, was the launch of the project for **Remodelling of Plaza de Oriente and Calle Bailén and Environs**, which forms one end of the city centre's main east-west axis which runs from here to the Paseo del Prado, with a hinge area in Plaza Mayor/ Puerta del Sol. The intervention essentially involved creating underground parking (partly for tourist buses, partly for residents) and a two-tier tunnel directing traffic beneath the front of the Palacio Real. As in the case of the Plaza Mayor, nearly 20 years before, the justification used was the partial pedestrianisation of a number of streets (a section of Calle Bailén, as well as Calle Felipe V and Calle Carlos III, combined with an area on the western perimeter, on Calle San Quintín and Calle Requena where pedestrians shared the space with vehicle traffic accessing the car park). On this occasion, however, the operation sparked intense political and technical debate. Opponents of the project focused on the greater need for investment in other actions, the environmental effects of the entrances to the tunnel and the complete underestimation of the importance of archaeological remains in the area of the original city (remains of a tower from the Moslem period, which came to form part of the first floor of the underground car park were almost invisible to the general public).

During this period, the Municipal Housing Company (EMV), which had previously confined its operations almost exclusively to the refurbishment of homes in the historical centre, began to take on an increasingly preeminent role in the redevelopment of the public space. Under a prior agreement with the Ministry of Public Works, Transport and Environment, the EMV acted as the body in charge of managing the "Protocol between the City Council of Madrid and the Autonomous Community of Madrid for the refurbishment of

residential and urban built heritage" signed in May 1994. This document was a keystone in public actions in the central area of the city, emphasising the idea of comprehensive refurbishment.

It may be helpful at this juncture to discuss the formula used for the Area of Priority Refurbishment (APR), under which the 1994 Protocol was managed. Following "years of uncoordinated sectoral activities", its aim was to create "a tool that integrates public and private action in the refurbishment of the centre, and which will therefore be effective in halting the serious urban, architectural and social deterioration suffered by the historical centre of Madrid"[11]. Within this notion of joint action, two separate types of intervention were identified. Public initiatives were oriented towards renovation of the public space, in a broad sense and included urban installations, development and conditioning of surface finishes and, through the "Architectural Adaptation Programmes" (which had already been trialled), to the recovery of the facades of buildings with an outstanding impact on the urban streetscape, according to their heritage value. Private actions were to involve the constructional and functional refurbishment of private buildings, including improvements in hygiene, accessibility, habitability and (in later stages) energy efficiency. They would be implemented by the associations of owners of the buildings affected, who would receive incentives in the form of grants, generally covering up to one third of the investment.

Three Areas of Priority Refurbishment were included in the 1994 Protocol: Area I, Plaza del Dos de Mayo; Area II, Plaza Mayor / Arco del Triunfo Phase 3; and Area III, Plaza de la Paja, Plaza de los Carros, Plaza de Alamillo and Plaza de la Cruz Verde.

The **Dos de Mayo APR** (which won the award for Urban planning, Architecture and Public Work in 1995) became a benchmark and a model for the redevelopment of other areas. The first phase of the action encompasses the space between Calle de Carranza, Calle de San Bernardo, Calle de San Vicente Ferrer and Calle de Fuencarral. It includes a total surface area of 23 hectares, 6,750 homes (in 1994) and has a very high density (293.5 dwellings per hectare). The second phase extended the renovated area to the south, which was now delimited by Calle del Pez, Calle de Jesús del Valle, Calle El Escorial and Corredera Alta de San Pablo.

For the first time, this action established systematic physical constraints on road traffic and ground-level parking. Although it did not involve the elimination of a large number of parking places, it did limit the possibilities for parking on footpaths and double-parking, which had become a serious problem, since the area's nightlife attracted large numbers of people from elsewhere in the city. New pedestrian areas were established; vehicular traffic was restricted to one street in the Plaza del Dos de Mayo, the symbolic centre of the neighbourhood (which was also completely redeveloped) and its main area of rest and recreation, and the transverse layout of roadway and footpath was systematised, according to the total width of the street. In wider streets (ten metres or more), footpaths were widened, with a raised kerb and linear parking. The introduction of tree pits slightly reduced potential parking capacity but helped reduce the visual impact of vehicles on the street and improved the bioclimatic conditions of the space by adding more shade. Narrower streets (seven metres from side to side) were designed with a single platform; footpaths and roadway were levelled and distinguished only by their different finishes and by a row of bollards to protect the pedestrian zone. The construction arrangement used, with paving stones laid on a bed of sand, marked an improvement in environmental quality (less noise, traffic calming, better thermal comfort) and

11 Obras de Urbanización e Infraestructuras del Barrio de Maravillas. 1ª Fase", brochure published by Ayuntamiento de Madrid – EMV, 1996

offered an aesthetic improvement on the existing tarmac. In addition, it meant that repairs could be carried out with less inconvenience for local people (in terms of the time and noise involved in the work) and the material could be reused.

On the downside, the policy of not eliminating parking spaces meant that on narrower streets where traffic and pedestrians shared the same space, the width of footpaths was severely restricted. At the same time, the paving soon deteriorated at junctions, due to turning and braking manoeuvres of heavy distribution vehicles and the gradient of the street (this was a decisive factor in the decision not to repeat the design in more recent actions, such as Calle de Amaniel). Another factor was the poor execution, which resulted from a lack of experience in Spain with this type of arrangement (which was common in Nordic and Anglo-Saxon countries).

However, the action did not include any complementary socio-economic programme, or any measures to control the prices of refurbished homes, which might have allowed any resulting profits—largely the result of public investment—to be recovered. After 15 years, the area does display a certain revitalisation, but it comes at the cost of the tertiarisation of the local economy, with the original population increasingly being pushed out by new medium/high-income residents (the area now has a significant presence of professionals and EU-15 immigrants) and in the most recent stage, a rapidly increasing shift to tourist usage.

Third stage: Peak of the comprehensive refurbishment 1996-2000

This third phase built on the trend set in the previous phase, although with greater intensity as a result of widespread EU financing. However, before looking at evolution of the comprehensive refurbishment we need to return to an analysis of other actions, in order to provide some context. Here it is helpful to look at the management reports for the period, and for this stage the report of the Municipal Planning Management Office for 1995–1999[12]. The new report, which was very similar in structure to the previous one, also included a chapter on conservation and improvement in public roadways[13]. As in the previous report, this reviewed the roadway and footpath projects, new street furniture, actions to remove architectural barriers, etc. However, it also contained a new Plan for Remodelling Squares, including some central squares such as Plaza de Sánchez Bustillo, Plaza de la Provincia, Plaza de Santa María Soledad Torres Acosta), the paving in the Plaza de Isabel II (these last two were redeveloped shortly afterwards) and the Plaza de la Cebada, which, to different extents, involved renovations and improvements to the public space. Actions were also carried out on several roundabouts on the outskirts of Distrito Centro, including the boulevards (Alonso Martínez, Bilbao and Ruiz Jiménez) and the Glorieta de Embajadores. These mostly involved enlarging the areas for vehicles waiting to turn, to improve traffic capacity. This frequently involved enlarging the central space, and—in a characteristic feature of these redevelopments—topping them off with fountains and water laminas. Paving, street furniture and lighting were also renovated, and new trees were planted. Another important development involved renovation of footpaths on Calle Alcalá, between Gran Via and Puerta de Alcalá. The case of Plaza de la Paja is interesting for its extensive (and uncommon) use of unpaved areas, a sharp contrast to the general trend towards "hard" designs.

12 Ayuntamiento de Madrid. Hacia el Madrid del 2000. Memoria de Gestión 1995-1999.

13 The EMV had come under the jurisdiction of a different government area and its operations are not included in this report. The EMV publishes annual management reports, which are listed in the bibliography

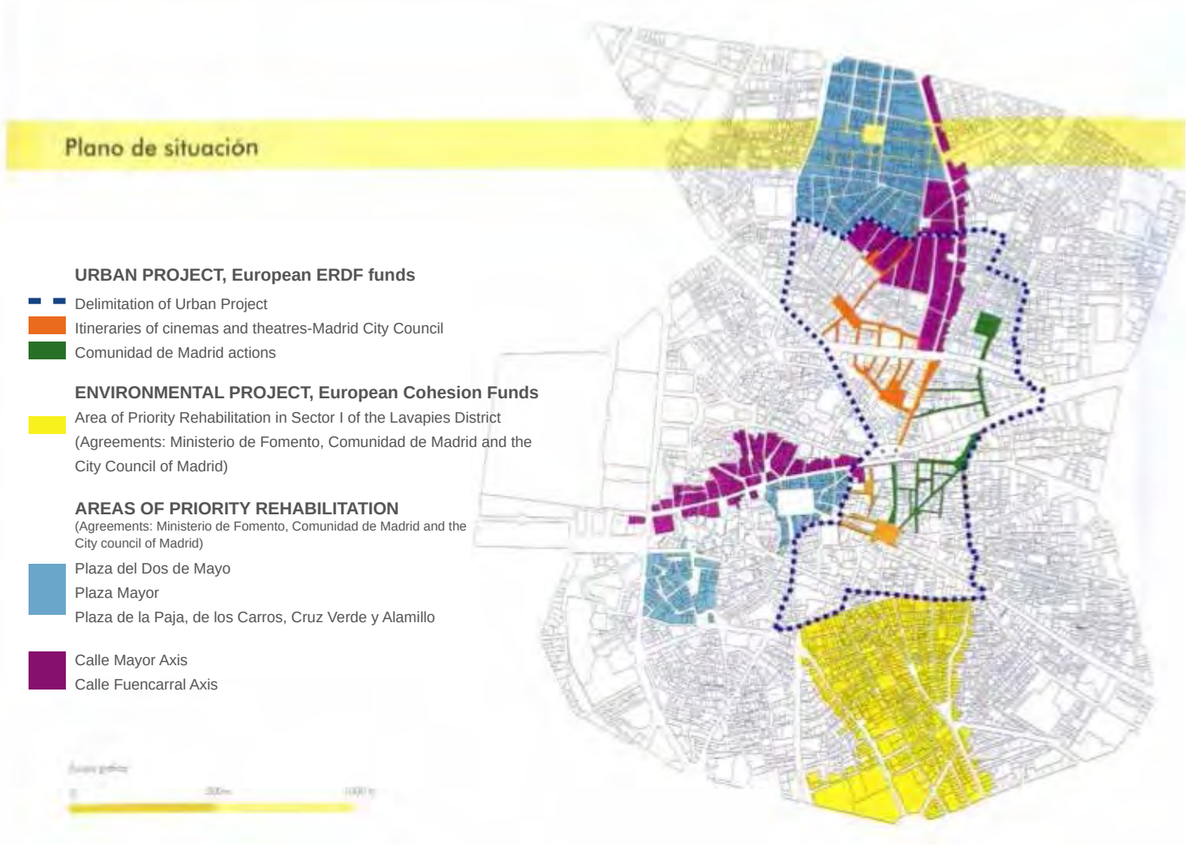


Figure 18. Interventions in the historical centre to 2000, by type of financing - Source: "Plazas que fueron y vuelven a ser", brochure published by Ayuntamiento de Madrid - EMV (2000)

During this third stage, the 1994 protocol and agreements governing Areas of Priority Refurbishment were twice extended; the first extension was finally passed by the City Council on 30 May 1996 and ratified on 6 November 1996 to include two new Areas of Comprehensive Refurbishment (ACRs), on the Calle Mayor and Calle de Fuencarral axes. The second agreement of 16 July 1997 created an ACR for Sector I of Lavapiés, which was later executed in different phases and actions. The most significant spaces involved in development of the Lavapiés district were the Plaza de Lavapiés, Plaza de la Corrala and Plaza de Agustín de Lara.

The action in the Lavapiés neighbourhood differed in several important ways from previous comprehensive refurbishment projects: it included not only the redevelopment or encouragement of private refurbishment, as occurred in Dos de Mayo, but also more complex actions such as:

- Operations to augment the sponge effect in the neighbourhood with the creation of 23,000 square metres of new open spaces, particularly the new Casino de la Reina park (designed by Matos and Martínez Castillo);

- Provision of new local and municipal amenities in the area, with the construction of new social and (particularly) cultural facilities of a high building quality (the social centres and day centres in the Casino de la Reina park, designed by the same architects; the new Valle Inclán Theatre, on the site of the old Olimpia Hall, designed by García de Paredes and Pedrosa; the new home of the open university, UNED, next to the old Pías de San Antón school, designed by J. I. Linazasoro; refurbishment of the old savings bank on Ronda de Valencia for the new Fundación Cajamadrid arts centre (known as the "the House on Fire"), and on the opposite side of the street, refurbishment of the old Pacisa factory for the new Price Circus, designed by Mariano Bayón).

- For the first time actions involving the social and economic fabric were included. This is especially important in a traditionally working-class neighbourhood, which already had a large migrant population and which was to some extent stigmatised;

- Access for the first time to European funds;

- And the integration of the ACR into the new 1997 Madrid General Planning Scheme, allowing some studies to be performed in the diagnosis phase, including mapping substandard housing to be included in the general plan.

Given the evident complexity of the new type of comprehensive operation a management body was created in July 1998. The General Directorate of Architecture and Housing of the Community of Madrid was placed in charge of the general coordination of the programme. In the case of Lavapiés, external funding took the form of Cohesion Funds for the Environmental Design for Lavapiés Sector I (approx. EUR 12 million), which was used in four programmes: renovation of the infrastructure of water resources and creation of an irrigation and street-washing network from a conduit of recycled water from the Arganzuela park (and eventually from the Viveros water treatment plant); implementation of the important Urban Fabric Sponge-Effect Programme; and improvements in accessibility to the road infrastructure, with particular emphasis on public transport, pedestrian routes and improvements to parking. In practice, this involved complete redesign and even the idea of a road hierarchy under which environmental areas would

be classified according to whether they were bordered by through roads or internal local roads [14]. The action led to the removal of 64% of all ground-level parking spaces (927 out of 1,453), offset by the construction of three large residents' car parks in Casino de la Reina (leading the intervention in the park to be split into two phases), Calle Agustín Lara and Calle de Cabestreros, with a total of 1,303 spaces. The net balance was a reduction of 150 parking spaces (more than 10%). To an even greater extent than in the case of the Dos de Mayo project, this shows how radically different this project was to the Plaza Mayor and Plaza de Oriente, in its attempt to discourage private traffic in the neighbourhood. This restriction was further extended when the district was listed as a Resident Priority Area (RPA) in 2006, with an essential ban on all traffic apart from residents' vehicles.

Also during this stage, the European Union awarded an URBAN programme for the centre of Madrid (EUR 27 million in ERDF funds). Its goal was to achieve sustainable change for the most vulnerable areas behind the Gran Via and it led to the redevelopment of the streets forming six routes between the 19 cinemas and 18 theatres in the area (listed at the time as activities for preservation under the directives of the 1997 General Plan). As the figure below shows, these routes also linked the APRs developed in previous stages [15]. The intervention in this area was later extended

Another important development during this stage was the piloting of public-private partnerships for redevelopment of the centre under the Convention signed between the Council and the Fundación Caja Madrid in 1996. As a result of this initiative, over the following years the following squares in the district were gradually renovated: Plaza del Alamillo and Plaza de San Ildefonso (1998), Plaza de Puerta Cerrada and environs (1999), Plaza de Provincia, Plaza de Chueca and Calle del Barco (2000), Plaza de Antón Martín-Atocha (2000-2001), Plaza de Santa Cruz (2001) and Plaza de las Descalzas and Plaza de San Martín (2002).

Fourth stage. Plan for urban remodelling of the historical centre of Madrid, 2001-2015

The fourth period involved defining the target of the intervention as being the historical centre as a whole. The report of the Works and Infrastructures Area 2000-2003, presents new instruments, including a new Plan for Remodelling Shopping Axes, which covers three streets in the district, Calle de San Bernardo, Calle de Preciados (pavement and services gallery) and Calle de la Hortaleza. Under the Intersection Remodelling Plan, the Plaza de Santo Domingo, Plaza de San Francisco El Grande and Plaza de Cibeles were all remodelled during this stage.

This period was also marked by redesign of two of the main city centre streets, Gran Via and Calle de Alcalá between Gran Via and Puerta del Sol, both large-scale and high-budget projects, but very different in nature.

However, the most significant feature of this stage insofar as it relates to this study, is that for the first time a plan was set out for redeveloping the centre as a single whole. This "Plan for urban remodelling of the historical centre of Madrid" was based on the following criteria[16]:

14 AYUNTAMIENTO DE MADRID. Hacia el Madrid del 2000. Memoria de Gestión 1995-1999

15 The routes were as follows: from the Plaza de Santa María Soledad Torres Acosta; from it to the Gran Via; Gran Via; Calle de Callao to Red de San Luís; Gran Via – Calle de la Montera; Plaza de Pontejos – Plaza de Benavente

16 AYUNTAMIENTO DE MADRID. Memoria de Gestión del Área 2000-2003

- It affects streets not included in the initial Areas of Priority Refurbishment (1994)
- It completes the previous action to create a homogenous urban whole
- It includes renovation of all urban services: water, gas and electricity supplies and sewer system.
- It sets out design criteria for roadways: priority of pedestrians over vehicular traffic, improvements in accessibility, environmental improvement, improvement in lighting and integration of artistic features.

Altogether the Plan involved improvements to over a hundred streets, although its target was far from being met in the following decade.

The refurbishment process continues, although it has slowed somewhat compared to the previous stage. Finally, other important actions included completion of the Casino de la Reina park which was included in the ACR for the Lavapiés district and which had not been finished (as mentioned, this second phase included the creation of a residents' car park), Plaza de Cabestreros for its unusual design, which is currently being altered at the request of local people; the action on Calle del Barco and its environs and, in particular, the action on the Calle de las Huertas, as Phase II of the "Prado – Plaza de Oriente Pedestrian, Tourist and Cultural Axis". The latter is viewed as a homogeneous route with strong functional specialisation, mainly oriented towards tourists. It entails introducing pedestrianisation criteria that are harder and more complex to implement (including access control systems) with higher standards of quality and renovation of street design. The operation on Calle de las Huertas completed the axis formed by two historical and tourist foci, the Prado and the Royal Palace, which began with the action on the Plaza de Oriente and was later reinforced by pedestrianisation of Calle del Arenal. The CRA of Calle de las Huertas was defined in November 2002 and extended in December 2005. It takes in a broad section of the eastern part of the old quarter, a traditionally working-class with industrial installations, such as the Mediodía Electrical Station and the Belgas Sawmills, converted into cultural facilities, the Caixa-Forum and Medialab Prado respectively. As with Lavapiés, the use of "culture" as a device for reactivating a neighbourhood shows a certain bias in the perspective of planners and politicians (especially given that this area already enjoyed an enormous cultural presence, with the 3 largest museums in the city—Prado, Thyssen and Reina Sofía—just a few metres from one another), in prioritising this type of amenity over others (for example, social or health centres or even municipal markets) that might be more aligned with the demands of the working classes. A decade on, the Letras neighbourhood is now one of the most gentrified in the downtown area.

Redevelopment, with a total budget of EUR 10.36 million in three phases from 2006 to 2011, combined strict pedestrianisation of Calle de las Huertas, where lines of tree were also planted (including an intelligent mixed solution in the section closest to the Paseo, which shifted the axis of the roadway to the northern side to maintain the axial line of pedestrian traffic), with the extensive use of single-platform road-sharing between vehicle and pedestrian traffic in other streets. This action again led to a major reduction in the number of ground-level parking spaces, only partly offset by the construction of a small mechanised underground carpark at the junction of Calle del Gobernador and Calle de la Alameda. Small rest areas (parklets) have been created in several zones, such as the front of the Caixa-Forum and some areas where the Calle de las Huertas has been widened, as well as the renovated Plaza de la Platería de Martínez.

The plans from this period, which build on the previous plan, are very ambitious: the document "Revitalización del Centro Urbano" [Revitalisation of the Urban Centre] produced by the newly-created Distrito Centro

Figure 19. Fiestas in Calle del Pez, 2017 - Source: Iñigo Lorente Riverola

Office, lists 6 new Areas of Comprehensive Refurbishment: Extension of Calle de las Huertas-Calle de las Letras, Extension of the Calle de la Hortaleza axis, Extension of Lavapiés Phase 3, ACR. Jacinto Plaza de Benavente, (Area of Refurbishment of the Historical Centre, ARHC) Calle del Pez-Calle de la Luna, ACR North-South Twelfth-century Site, which altogether affects more than 4,400 homes. It also includes the new Agreed Refurbishment Area (Área de Rehabilitación Concertada) instrument which uses the possibilities provided in the 2001 Madrid Land Act (Ley 9/2001 del Suelo de la Comunidad de Madrid) and the declaration of public utility to try to overcome the limitations currently faced in refurbishing homes due to their nature

The Pez-Luna ARHC (initially an ACR) may be seen as merging these two diverse actions: an extensive action at neighbourhood level and a specific action centring on specific streets, or in this case, specific squares. This is a characteristic feature of the final part of this period, when there were budgetary cutbacks[17]. The Pez-Luna ACR was declared on 27 February 2006 by the Department for the Environment and Land Planning of the City Council of Madrid and ratified that same year by the Community of Madrid and the Ministry of Housing. It marks a continuation of the two previous Refurbishment Areas (Dos de Mayo and Calle de Fuencarral), completing the action on the four-sided area between Calle de Fuencarral and Calle de San Bernardo running in a north-south direction, bounded by the boulevards to the north and the Gran Via to the south.

The Refurbishment Area covers an area of 9.8 hectares, with a total of 3,164 homes (322 homes per hectare), 267 buildings (most of which were built in the late nineteenth and early twentieth century) and an important number of business premises (333), many of which were empty when the operation began. The area is delimited by Calle Valverde to the east, Calle del Desengaño, Gran Via and Flor Alta to the south, Calle de San Bernardo to the west and Calle del Pez and Calle de la Puebla to the north. In principle, therefore, it is a well-situated location, in a central position in Madrid, and a neighbourhood with a high degree of planning uniformity (given the characteristics of the building and the road structure) as a whole.

Total investment for the intervention came to EUR 30,101,119. EUR 7,937,386 came from the Ministry of Housing, EUR 5,749,910 from Madrid City Council and EUR 4,452,665 from the Community of Madrid, with a further EUR 11,961,156 coming from private initiative. A number of reasons were given by public authorities for intervention in the area (which forms part of the Historical City of Madrid Complex, and is therefore a listed Site of Cultural Interest): the high level of street prostitution, drugs, the influx of low-income immigrants with subsequent overcrowding and a shortage of amenities and public spaces and the poor condition of the existing ones. At the same time, gentrification of the neighbourhood, which increased as a result of the Triball private initiative, ultimately led to an increase in rents due to an influx of tenants with higher purchasing power, particularly EU immigrants and young professionals. Public action is also required to alleviate the effects of the resulting exclusion of more vulnerable residents—i.e. lower income groups (mainly old people and immigrants)—although one might ask whether the results are nominally the same as those established out by the authorities.

17 The text in the following paragraphs on Pez-Luna uses data taken from previous articles by one of the authors, ARDURA et al (2008), ARDURA and MORALES (2011), ARDURA (2014).

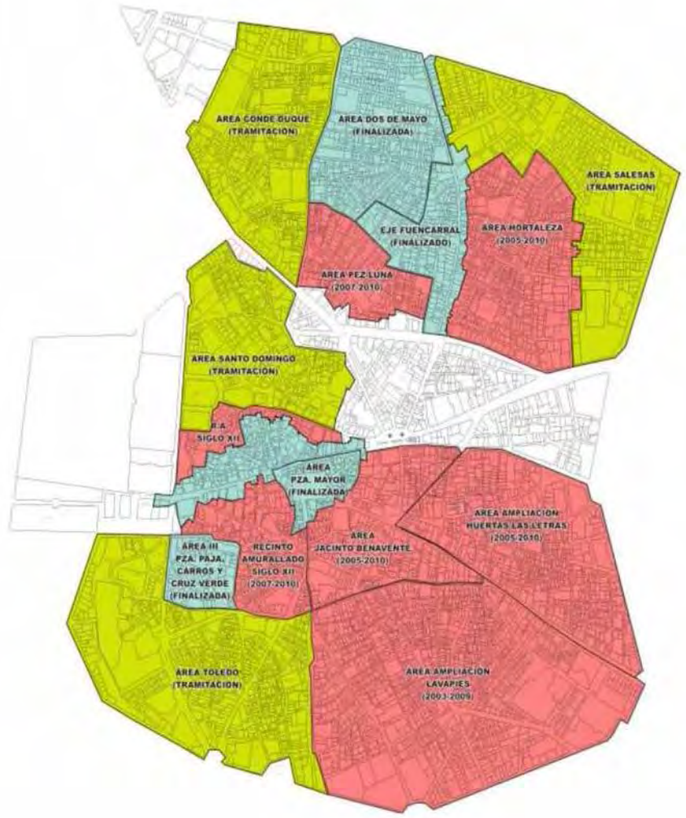


Figure 20. Refurbishment Areas in the Central District. 2011 - Source: EMVS

Figure 21. Plaza de la Luna (Plaza de Santa María Soledad Torres Acosta) - Source: Authors

After it was declared an ARHC and ACR in 2006, with the Municipal Housing and Land Company (Empresa Municipal de la Vivienda y el Suelo or EMVS) as the managing body, the added value of Pez-Luna is that (together with the San Cristóbal de los Ángeles neighbourhood, on the southern periphery), it marks a pilot project in which a new dynamic was trialled for launching comprehensive regeneration processes in the neighbourhoods of Madrid. Unlike San Cristobal, however, which was to a great extent conditioned by the urgency of the situation, in the case of Pez-Luna the process was comprehensively and jointly structured from the outset. In this regard, the joint and coordinated action of the political-administrative structure, technical officials and the neighbourhood movement was strengthened, fostering engagement by each of these agents within the framework of a participative dynamic whose aim was the collective formation of a sustainable neighbourhood from three perspectives, physical, social and economic (albeit not always successfully). Central values in the whole process are, therefore, participation, multi-disciplinarity, cross-cutting processes, and sustainability (temporal, institutional and environmental). The development of this participative process meant that actions affecting the social and economic environment were still not fully profiled even when actions affecting the physical support in the ARHC had already begun. These are structured around three main lines of intervention, following the design adopted in Lavapiés: development and infrastructure work, architectural adaptation programmes and grants for private refurbishment of homes. One medium-term goal is to incorporate the participation process within the actions affecting the physical environment, if the reticence of public authorities in this regard can be overcome. This would help avert scheduling clashes of this kind between different types of action.

At the same time, there is a serious lack of green spaces in the Universidad neighbourhood, in keeping with a more general trend that can be seen throughout Distrito Centro. There are only five squares in the neighbourhood (Dos de Mayo, San Ildefonso, Joan Pujol, Soledad Torres Acosta, Carlos Cambronero), but only the latter (also known as Plaza de la Luna) is included in the area delimited by the Pez-Luna ARHC. This is the largest square in the neighbourhood and resulted from the demolition of a number of buildings in the 1960s. Nonetheless, and despite its proximity to the Gran Via—or perhaps precisely because of its position at the back the Gran Vía—it does not get particularly heavy traffic.

In the Distrito Centro, there is a link between public spaces and effective or potential processes of social exclusion. Residents see such situations—particularly the issues of drugs, prostitution and the presence of homeless people—as threats to the few public spaces. As a result, local people demanded an intervention in the area, focusing on remodelling of Plaza de Santa María Soledad Torres Acosta and the neighbourhood association ACIBU submitted a proposal for the creation of an "urban beach", designed by the Ecosistema Urbano studio. However, once again it was the council—on this occasion the Environment Area—that chose the final design for the square (which has already been redesigned several times in recent years). The decision was taken in a situation of urgency, independently and without any association to other actions in the ACR. The solution chosen prioritised security over all other factors, using "noble" materials (granite and Corten steel) and if anything it is overdesigned. However, the result is overly harsh and even hostile, a tabula rasa, occupied only by a private outdoor cafe. This is significant because, as we shall see, it was replicated in some other actions that followed immediately afterwards, such as the new redesigns of Puerta del Sol and Calle del Callao. With the idea of getting rid of some of the gradients that tend to create "dead angles", the square has been transformed into a single slightly tilting stone plane which is overlit at night. There is scarcely any vegetation or street furniture, with the result that walkers, especially women, tend to avoid the space preferring to skirt the perimeter of the square rather than walk across it.

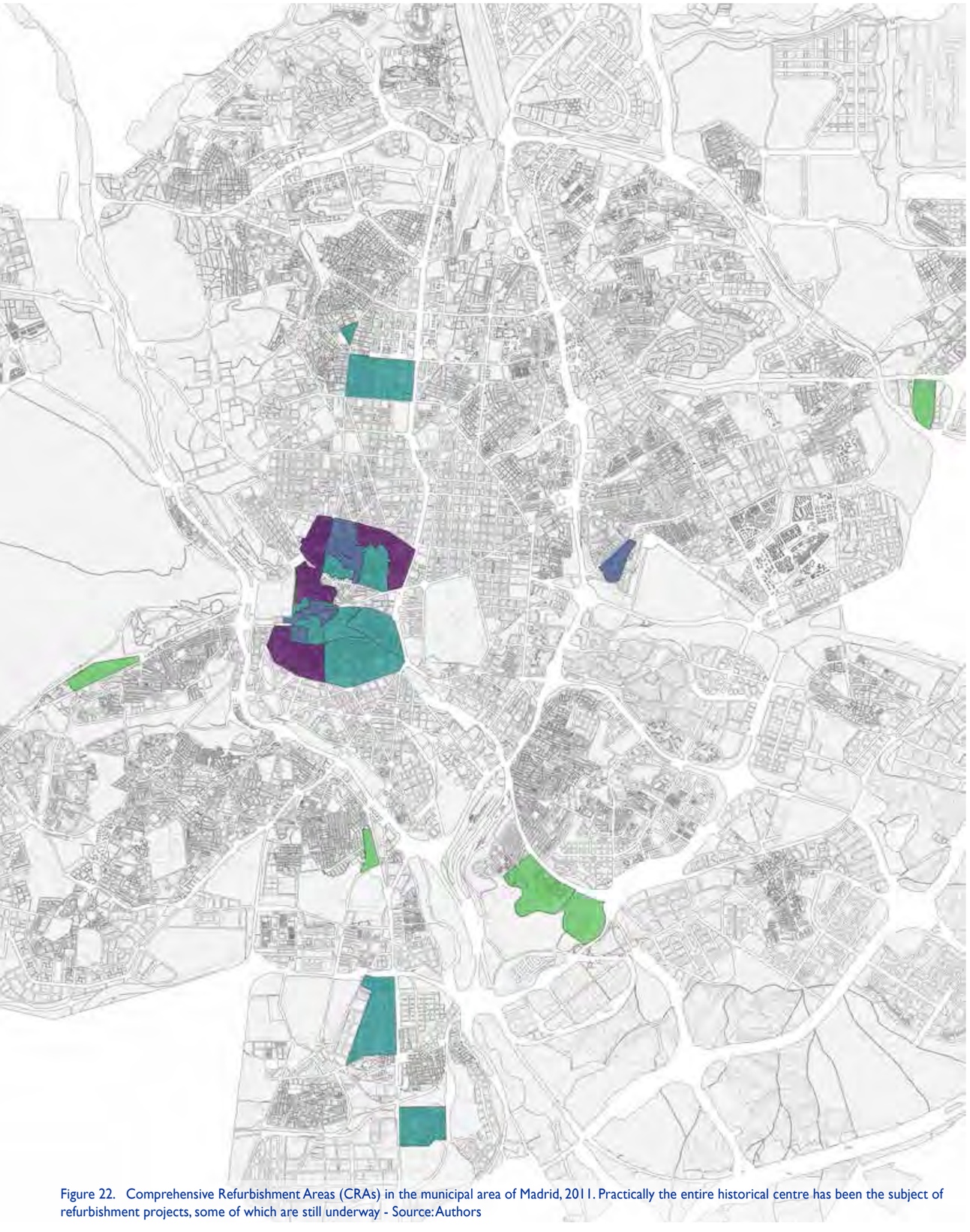


Figure 22. Comprehensive Refurbishment Areas (CRAs) in the municipal area of Madrid, 2011. Practically the entire historical centre has been the subject of refurbishment projects, some of which are still underway - Source: Authors

The only amenity is a small children's play park, confined to one end of the square, and a plant-covered wall covering a central barrier, which is currently in poor condition. Local people have already proposed another redesign for the square. Work on the alterations began in 2018 with the relocation of the children's area to a more central position and the installation of new sports apparatuses.

The 2007 redesign was accompanied by the installation of CCTV cameras, and numerous signs advertising their presence. The consumption and sale of drugs, mainly in the square and the rest of the southern area of the neighbourhood, has moved to adjoining streets. The largest focuses of prostitution are also in the southern part of the neighbourhood—in Calle del Desengaño, Calle de la Ballesta, Calle de Loreto y Chicote and Calle de la Puebla—and are mostly concentrated in an area scarcely 150 metres in diameter. There has been a reduction in the number of homeless people using Plaza de Santa María Soledad Torres Acosta, especially at night, as a result of remodelling of the square, but comprehensive measures need to be adopted to tackle the social dimension of the problem, in order to provide a more effective and sustainable solution.

A competition was held to design redevelopment of the other streets in the ACR and the contract was awarded in October of 2007. Under the title "Luna Nueva" [or New Moon, a play on the name of the square], the winning design, by Jose Javier Bataller and Javier Tejera, sought to reclaim spaces for the pedestrian. The project included complete pedestrianisation of Libreros, Flor Alta, de la Nao, Loreto y Chicote and Mesonero Romanos, and the creation of areas combining road and pedestrian traffic, with uninterrupted paving in the "comb" formed by Calle de la Luna and streets running at right-angles to it. The propose arrangement for Calle de la Flor Alta and Calle de los Libreros envisaged introducing removable huts to be used for cultural activities by the various bookshops in the area and the neighbouring European Design Centre, in an attempt to turn these streets into a natural extension of the Gran Via. However the response has not lived up to expectations.

Of the projects we have examined so far, we can see that the comprehensive refurbishment policies introduced to date have primarily targeted areas in the historical centre for its heritage value and its condition as a social theatre and the focus of the city's collective imaginary. As a result, they have tended to attract more attention and more funding. However, after two decades of this type of policy, almost the entire historical centre (which more or less coincides with Distrito Centro) has either undergone or is currently undergoing processes of refurbishment—the most important project being the recent redesign of the Gran Via—while hardly any such projects have been implemented in outlying neighbourhoods. The time has come for the focus of attention to turn towards the outskirts, which are also a consolidated city, indeed, a much larger area than the historical centres and the areas of nineteenth-century planned enlargement (the Ensanches). The first ACRs are now beginning to emerge in peripheral areas (San Cristóbal de los Ángeles, Ciudad de los Ángeles, Tetuán, La Elipa).

As mentioned, the intervention in the Plaza de la Luna links in with other actions in the district's main squares—primarily Plaza del Callao and Puerta del Sol (see the chapter on Actions in Squares) but also Plaza de Antón Martín, Plaza de Tirso de Molina and Plaza de Santa Barbara. Following redesign of Plaza de la Luna, and after the onset of the economic crisis, the City Council, using an injection of capital from the Spanish government's "Plan E", undertook redesign of Plaza del Callao. This project had originally been scheduled to coincide with redesign of the nearby Plaza de Santo Domingo in 2005 but had been put off due to lack of funding.

Figure 23. (left) Plaza del Callao before redesign - Source: El País
Figure 24. (right) Plaza del Callao following redesign - Source: El País

Figure 25. Examples of private occupation of the Plaza del Callao - Source: Authors

A smaller Plaza del Callao already existed on the site, at the junction of Calle de Preciados and Calle de Jacometrezo, which at the time was a much-used road linking Plaza de Santo Domingo with the Red de San Luis. The major urban reconfiguration involved in the Gran Via absorbed the section of Calle de Jacometrezo running between Red de San Luis and Plaza del Callao, thus enlarging the square. It soon became an intermodal interchange; prior to the 2009 redesign there was a seven-metre footpath running around the perimeter with a park area in the centre housing bays for urban buses. As a result, the square had intense vehicular and pedestrian traffic, as well as diverse and highly-concentrated street furniture. Despite the relative lack of recreational space, Plaza del Callao was an important meeting place, due to its position at the end of the Callao shopping area and the large number of cinemas along the Gran Via.

The main rationale for the 2009 redesign of the square was, once again, to reclaim space for pedestrians, by eliminating road traffic and moving the bus stop to Calle de Jacometrezo. In addition, the council announced "the planting of 48 new plane trees in Plaza del Callao and environs, in addition to the 28 existing ones, replacement of 83 light points and installation of a further 39 and installation of new benches and litter bins, as well as bike shelters and parks in the intermodal area"[18].

However, the reality is that following redesign, the square has no new trees (there is only one remaining specimen), and the existing parterres have been eliminated. The Metro entrance has been moved to the perimeter, as have the other newsstands, leaving the central space as a large stretch of hard granite, similar to Plaza de la Luna, but with none of the latter's ornamental details. Finally, the new seats are not benches as such; only two individual chairs have been installed, supposedly to prevent them from being used by homeless people.

Unlike Plaza de la Luna, the redesign of Plaza del Callao was not the result of a demand from residents. It met with little opposition after either the announcement of the work or its execution, largely due to the fact that there are practically no residents in the area. The commercial frontage is saturated with shops and catering establishments, many of which belong to large groups and occupy entire buildings. Many of the other buildings are used for different forms of accommodation, ranging from pensions to hotels. The council's main interlocutors are the traders' associations and this situation appears to be accepted by the local population. Whereas in Luna, local residents and citizens demanded a say in the decisions taken, in Plaza del Callao (and the rest of the Gran Via and Calle de Preciados) the local population accepts its role as passive users/consumers.

Use of the square since the redesign also differs from Plaza de la Luna. It is in no way a themed space, and it has intense footfall (calculated at 113 million people per year). Nonetheless, in addition to the structural similarities, the two have other features in common. Plaza del Callao has to a great extent lost its condition as a recreational area (an area for staying in), although not as a meeting point. People continue to meet there, but they soon move on towards the perimeter. This is partly due to the inherent hostility of the site (to use Augé's[19] terminology, one might call it a non-place —very hot in summer and very exposed in winter. Above all, though, it is a result of the process of privatisation —temporary but almost continuous— suffered by the square, at least until 2015.

18 See http://www.elmundo.es/elmundo/2009/02/05/madrid/1233831810.html

19 AUGÉ (1993)

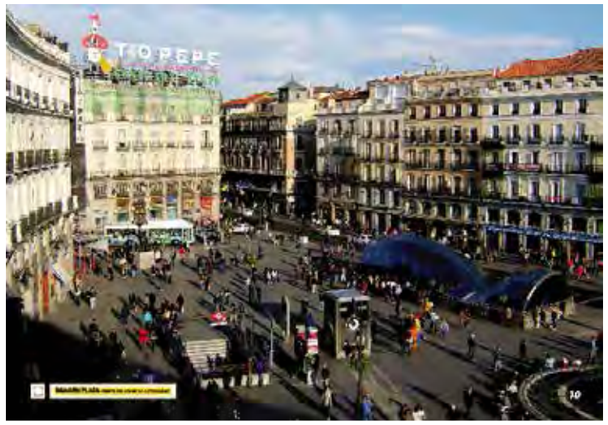


Figure 26. Puerta del Sol following the 2009 redesign - Source: COAM
Figure 27. People sitting on the rim of the fountain in Puerta del Sol - Source: Authors

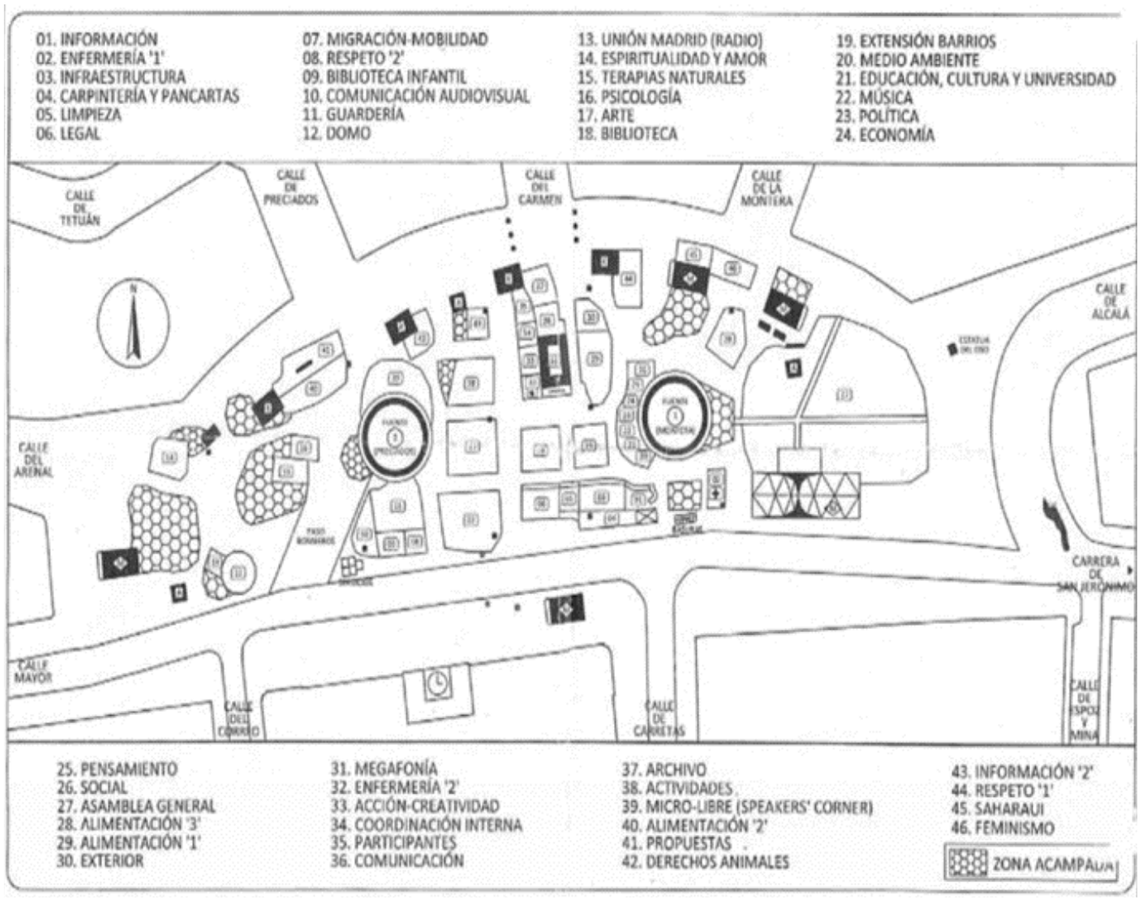


Figure 28. Plan of the Puerta del Sol anti-austerity camp - Source: Martínez Tapia (2013)

The perimeter area has been taken over by franchises operating in the area, who took advantage of an amendment to the bylaws to install outdoor seating. More importantly, however, the space has been occupied almost continuously by a series of temporary advertising and commercial installations. A recurring example is that of the Corte Inglés department store, which uses the square as an extension to its adjoining facilities, especially at Christmas and during the sales. It has also been colonised by all types of large corporations who can afford the price—very high under the new bylaws, but a lot cheaper than rentals in the area. These facilities often take the form of actual constructions (a canopy, a climbing wall, an ice rink, a concert stage) occupying most of the surface area of the square.

On other occasions, the square's stage-like character is reinforced, when it us used for even shorter periods as the venue for film premieres (given that most of the former cinemas on the Gran Via have now been turned into stores or at best, theatres). Previous administrations sought to encourage this development, with a proposal entitled "Lit Scene", which would have involved installing giant screens on the square and the Gran Via, turning Plaza del Callao into a sort of Madrid version of Times Square.

To sum up, although the pretext for transformation of the space was to reclaim space for pedestrians, in reality, this aim has not actually been achieved; for much of the time, the central space is taken over on a temporary basis for private use (according to the District Council, more than 1,800 temporary occupation permits were issued in 2013). Even when it is not in use, it does not meet the minimum conditions of comfort required of a space for people to stay in. It seems more logical to presume that the real intention behind redesign of the square and the changes to the bylaws was to create a rentable "plot" which would raise revenue for the municipal coffers (as is the case with other city centre squares, but to a much more extreme degree). The council has since reduced the number of permits issued; nonetheless, a city-wide improvement in the regulation of events is needed, given the high demand for this specific space.

Shortly after the redesign of Plaza del Callao, work on Puerta del Sol began. Also completed in 2009, with funds from the central government's Plan E, Puerta del Sol had been the site of construction work since 2004, due to the creation of a suburban rail station beneath the square, which led to the temporary closure of the eastern half of the square.

In this case, even less notice was given of the final result of the redesign, which had to be agreed with the Ministry of Economic Development, which was responsible for the rail station. When it was made public, it drew intense criticism, especially over the glass shelters leading to the station (designed by A. Fernández Alba, on commission from the Ministry) and the "hard" design of the square which resembled that of Plaza de la Luna and Plaza del Callao. The project involved a hard, largely uniform surface (also in granite), with no trees, street furniture (especially benches), etc. In other words, it was practically devoid of features. Only the two fountains and some of the statues were retained— even the symbolic figure of the "Bear and the Strawberry Tree" from the city coat of arms and the statue of Mariblanca, were moved.

Once again, the pretext for the operation was that it would provide more space for pedestrians and would remove the bus bays, which were moved to Plaza de Canalejas (whose subsequent underground installation was again used as justification for "Operation Canalejas"). In this new featureless space, people are forced to sit on the rims of the fountains due to the absence of benches. There is an almost permanent police presence, which often means that there are police cars parked in the square, as in Plaza del Callao or Calle de la Luna.

Figure 29. Classification of actions by year - Source: Authors

Despite this continuous police presence, Puerta del Sol gained international fame in the weeks following 15 May 2011, when the surprising success of an anti-austerity demonstration called by Democracia Real Ya led to an impromptu camp in the square. A violent attempt to break up the protest only served to attract more protesters. The event served to reinforce Puerta del Sol's position as a symbolic centre of the citizen space, or at least of left-wing movements which frequently end their marches and demonstrations in the square.

The hostile, featureless nature of the space provided to be an advantage for organisation of the "15M" camp, and a sort of self-governing village was created, run by assemblies. The camp survived for over a month, and links were developed with the Syntagma Square, Tahrir Square and Gezi park protests.[20]

The then president of the Community of Madrid, Esperanza Aguirre, sought to discredit the camp on the grounds of the serious harm it was causing to traders in the area, who she once again acknowledged as the principal interlocutors and in June 2012, they were rewarded for their opposition to the camp. At an international level, however, the importance of Occupy movement was underscored when it received a European Prize for Urban Public Space, awarded in April that year for the "A large-scale demonstration by citizens demanding improvements in the democratic system by means of a temporary occupation of one of Madrid's most representative squares"[21] .

Just a few months after the prize was awarded, the City Council launched a new intervention in the square, on the pretext of adding a cycle lane connecting Plaza de Cibeles to the Palacio Real. The project included a concession to operate a 100 square metre bar/stand and a 300 square metre outdoor seating area. The proposal immediately met with near unanimous criticism and was withdrawn, although the bicycle-lane was installed.

The College of Architects (COAM) was one of the main critics of the proposal which it considered to be no more than a patch. It offered to organise an International Competition of Ideas in 2014 which led to the commissioning of a new "comprehensive" redesign. Entitled #PiensaSol, it was advertised as a "participative" process with a jury drawn from the architectural star-system, including the commissioner of the Pritzker prizes. The competition was also criticised on the grounds that the intervention was costly and unnecessary just 4 years after EUR 4.6 million had been spent on the previous redesign, at a time when the city council, whose finances were already stretched, had much more pressing budgetary requirements. The competition—which had a budget of EUR 39,000—seemed more like a self-legitimising process on the part of the COAM, presenting itself as an actor in processes of urban intervention, but actually attending more to the corporate interests of a profession in crisis than the needs of the citizens of Madrid. The competition was won by J. I. Linazasoro. The General Directorate of Public Space is currently considering execution of a range of soft "low cost" actions, with a view to reorganising the semi-mobile elements and introducing more vegetation.

As well as these specific actions in squares, during this most recent stage, a number of important actions were carried out in Axes (see the chapter Actions in Axes). Indeed, the action linking the pedestrianisation zones of Calle del Arenal, Calle de Fuencarral and Calle de la Montera, with 3 different projects, might be seen as a single axis, were it not for the absence of coordinating elements (see the section on the Strategy for the creation of a network of pedestrian routes in the "central almond" of Madrid). In all three cases, but

20 MARTINEZ TAPIA (2013)

21 See <http://www.publicspace.org/es/obras/g001-acampada-en-la-puerta-del-sol>

particularly in Calle de Fuencarral, these streets have a high level of retail business and intense foot traffic, and the pedestrianisation solutions have not included separate strips for cyclists.

Calle de la Montera and Calle del Arenal were pedestrianised almost simultaneously. In Calle del Arenal, the first phase, comprising the section from Puerta del Sol to Calle de las Hileras, was completed in December 2016, and involved investment of EUR 1.3 million. As well as the 3,900 square metres covered in a controversial three-colour paving (which has provided to have problems with durability), the 55 new trees and the space gained from road traffic (16,000 vehicles per day), this road has preserved a "shared" space, to allow vehicles to access the Descalzas and El Corte Inglés car parks. Work still needs to be done to minimise the impact of the ramps leading to the car parks on Plaza de San Martín and Plaza de las Descalzas. The EMV conducted a preliminary study, exploring the possibility of joining the two car parks up, a solution which might allow some of the ramps to be removed. The speed at which new technologies facilitating car park management are being introduced, such as automatic car registration recognition, means that it is no longer necessary to have a physical separation between the different types of parking (commercial / short-term versus residents). This aspect was mentioned in the 1993 article by GARCIA ALARCÓ, and reflected in the regulations of the General Plan of 1997. Use of these techniques could improve management of the new car parks recently taken back under municipal control (including Plaza de España and Montalbán, on the fringes of the Central District) and allow greater flexibility in adjusting the supply of residents' parking spaces to meet demand.

The second phase of pedestrianisation of Calle del Arenal took place between February and April 2007, extending the area of action from Calle Hileras to the Plaza de Isabel II, which was in turn partially pedestrianised in 2009, removing the possibility of turning from Calle Arrieta onto Calle Vergara. This created another pedestrian route between the Royal Palace to the Prado, in addition to the Calle de las Huertas axis discussed above. From the outset, however, this scheme was designed to be reversible, given the need to ban traffic for two years on Calle del Arenal while work on the new suburban rail station at Puerta del Sol was being completed.[22]

The action in Calle de la Montera also seems to have been partially motivated by the works in Puerta del Sol. The first section was completed between June and December 2006, and the project made it possible to renovate services and paving in a 1,300 square metre area between Puerta del Sol and Calle de la Aduana, of which 732 square metres was used for new pedestrian space with investment of EUR 466,000. The second phase was executed two years later, between July and November 2008, with investment of EUR 1.5 million, and affected 4,468 square metres, of which 1,850 square metres was converted to pedestrian use, to a great extent by removing the traffic lane and roadside parking. The project also involved planting 44 trees. The operation met with little opposition, partly because of the clear need arising from work on the suburban rail station. In addition, this had traditionally been an area of kerbside prostitution, and some of the population saw pedestrianisation as a means of "shifting this activity on" to other less visible areas, although this has only partially been the case.

The action in Calle de la Montera was extended with the pedestrianisation of Calle de Fuencarral, in the section between the Red de San Luis and Calle de Colón. The project was announced during Mobility Week in September 2008 by the then mayor, Alberto Ruíz-Gallardón, and work began in March of the following

22 See "Arenal despide a sus coches (GUTIERREZ, 2006), especially the statement by then councillor Paz Gonzalez. https://elpais.com/diario/2006/11/04/madrid/1162643057_850215.html

year, with a budget of EUR 2.7 million and a duration of 4 months. Of the 10,631 square metres affected by the council's intervention, 91.5% (9,731 square metres) was devoted to pedestrian areas. Pedestrianisation, which has resulted in a 40% increase in pedestrian footfall, has had a visible effect on the make-up of the retail frontage. The shopping area—essentially associated with garments and textiles—of Gran Via has spread, with an excessive proliferation of franchises (in this case medium and small-sized outlets). To a great extent the remaining traditional shops have been drive out by a sharp rise in rental rates and by 2015 this was the fourteenth most expensive shopping street in Spain by rent per square metre. There has also been debate as to the suitability of full pedestrianisation; some critics feel that the axis could have been used for certain types of public transport, such as micro–buses, similar to those currently operating between Calle de Sevilla and Arguelles, to provide greater accessibility to this area of the historical quarter. At the end of 2018 it was announced that during the next term of office, work would be carried out on the remaining section in Distrito Centro, between Plaza de Colón and Glorieta de Bilbao. This will probably not be exclusively pedestrian, at least in the section running northward from Calle Barceló.

As already mentioned, the last major action before 2015 was in Opera, as the Plaza de Isabel II is commonly known. In this case, partially by reason of the major alterations being carried out on the Line 2 Metro Station, the works affect the Plaza de Isabel II, the final section of the Calle del Arenal, Calle Arrieta from Calle de Caños del Peral to Calle de Felipe V and Costanilla de Los Angeles. In total, the plan affected an area of 9,350 m2, of which 2,446 m2 were given over to new pedestrian spaces. Work began in August 2008 and extended throughout 2009, with a budget of EUR 2 million. As already mentioned above, this operation completes the link between the Royal Palace and Puerta del Sol and the de facto link between Calle del Arenal and the shopping circuit of Calle de Fuencarral-Calle de la Montera and Calle de Preciados-Carmen. Retail outlets in the area have also been affected. Due to the proximity of the Teatro Real and the Conservatory of Music, this area is home to many specialist music shops. This action was a necessary prerequisite for declaration of the Opera neighbourhood as a Resident Priority Area (RPA), a step which was finally delayed until 2016.

Opera was the last large-scale action in the public space in the Central District until 2015. The financial crisis, together with over-borrowing by the council, caused fundamentally by the Madrid-Río operation, led to a restructuring of investment in the public space—which, as we have seen, had already been intensely transformed, sometimes twice or three times over.

With the election of the new municipal government in 2015, a series of projects were launched, intended both to conclude previous actions, and also to prepare the entire district to be declared a Low Emissions Zone. Some of these measures are discussed in subsequent chapters.

Of these, the most important is without doubt the work carried out in Gran Via, which together with the declaration of Madrid Central, marks a milestone both for its symbolic value (the measure has received extensive international coverage) and its success in reducing private transport. Nonetheless, as we shall see in the following chapters, many other interventions have also been carried out in the district during this period.

7 2015 - currently underway

8 Total actions

Figure 30. Actions since 2015 and total redesigned - Source: Authors

ACTIONS RELATED TO MOBILITY

Inmaculada Mohíno Sanz and Iñigo Lorente Riverola

Resident Priority Areas (RPAs)

Alongside and subsequent to the "hard" actions of redevelopment processes associated with the Refurbishment Areas, a number of equally decisive actions have been implemented related to use of the public space. These include the implementation, from 2004, of "Resident Priority Areas" (RPAs). In these zones, access to non-resident vehicles was restricted, in order to preserve sustainable use of the roadway and reduce noise and atmospheric pollution levels.

Access to the RPAs was controlled using CCTV cameras installed on access roads, which take a picture of the vehicle's rear registration plate. The registration number is checked against a database of authorised numbers. Access was unrestricted for certain vehicles, such as residents with SER (regulated parking) plates in their corresponding neighbourhoods, private cars with SER Zero Emission plates, taxis, ambulances, motorcycles (between 7 am and 10 pm) and bicycles. Access was also permitted to vehicles using car-parks or users of registered accommodations in the RPAs and for loading and unloading purposes. Even some private vehicles were permitted, although the owner of the relevant home or establishment had to apply for access authorisation for such vehicles.

Although it does not involve full pedestrianisation, in real terms the system has allowed pedestrians and motor vehicles to share the space by reducing traffic intensity to very low levels. Several studies set the threshold for pedestrian re-appropriation of the street at below 1 – 1.5 vehicles per minute, which coincides with the rate achieved in the RPAs and more recently in Madrid Central. With improvements in the technology required for controlling access, less initial investment is required in physical features to effectively transform the public space. It also reduces pressure on ground-level parking spaces for residents, which in turn enables more spaces to be eliminated with less criticism; this has been shown to be one of the best measures for changing the modal distribution (see the document by GARCÍA ALARCÓ, P. (1993), analysed in detail below).

At the beginning of the present legislature, four RPAs were in operation: Cortes (2004) Letras (2005) Embajadores (2006) and Opera (2016). The launch of Madrid Central, although justified by the reduction in emissions, in real terms means extending restrictions on non-resident traffic to the whole of Distrito Centro—a project that was initially proposed by the previous administration but never put into practice.

Initial assessments (based on the first month of operation), indicate that the Madrid Central scheme has brought very substantially altered traffic behaviour in qualitative terms, as reflected in a number of changes:

- a reduction in trips by private vehicle;
- a very substantial reduction in traffic intensity on the Gran Via (down 30.42% on work days) and

Figure 31. Delimitation of Madrid Central - Source: Ayuntamiento de Madrid. El País (September 4, 2018)

a somewhat lesser reduction on other streets (9.66% on Calle Toledo, and 8.27% on Calle de San Bernardo);

- an increase in the number of trips taken on public transport, especially on the EMT network (more than 10,000 trips per day, up 3% within the Madrid Central zone and 5% in the perimeter), and by foot (up 40%);

- and a transferral of traffic to the M-30 (up 0.9%, as compared to the perimeter of the Low Emissions Zone, where it is down 2.53%.

This means that the targets of reducing the number of trips, and particularly of eliminating through traffic in the district have been met. Above all, however, the scheme has had a very significant symbolic effect, which paradoxically has received wider coverage outside Spain, with articles in the New York Times[1] and the Guardian[2]

Temporary actions

Two other temporary forms of traffic constraint have also been tested: long-term restrictions that only affect a specific daily/hourly period; and short-term restrictions, applied throughout much the day. These might be included among the so-called "soft actions" whose advantage is that they require very little investment and are easily reversible

Examples of the former include the closure to traffic of Calle de Fuencarral at weekends, in the section immediately outside Distrito Centro (Glorieta de Quevedo-Glorieta de Bilbao), as well as of the Paseo de Camoens, which although implemented in the Moncloa district largely affects the Calle de Bailén axis; both of these schemes were begun under the administrations pf the Popular Party. In the first case, the move was accompanied by a parallel "hard action" which involved reducing the roadway to two lanes with two linear parking strips, to provide a wide footpath. Under the current administration, the system has been extended to the Paseo del Prado (Atocha-Plaza de Cibeles), also at weekends, a move which has been widely welcomed by local people. In this case, the large-scale "hard" action which still remains to be implemented involves actions on the Prado-Recoletos axis, as set out in a design competition won by a team comprising Álvaro Siza and J. M. Hernández Leon. To date, the only part that has been implemented is the pedestrianisation of Plaza de las Cortes and Cuesta de Moyano. This operation is especially urgent in the case of the western footpath of the Paseo, which is particularly narrow and supports a large volume of tourist traffic, because it lies on the route between three of the large museums in the city: Thyssen, Caixa-Forum and Reina Sofía. However, there does not appear to be any agreement on developing the Special Plan that would be required to implement the project.

Of the second type of actions, one of the most important, implemented in December 2016, involved reducing the number of lanes on the Gran Via for a 9-day period, to cater to increased pedestrian traffic in the Christmas shopping period. Despite the media storm raised by the opposition, the move appears to have been widely welcomed by the public. The action led to a reduction in road traffic of around 50%, with no major congestion, and intense use by pedestrians. This temporary action served as a test bench for a

1 See https://www.nytimes.com/2018/12/15/opinion/sunday/cars-pedestrians-cities.html

2 See https://amp.theguardian.com/cities/2018/nov/30/its-the-only-way-forward-madrid-bans-polluting-vehicles-from-city-centre

subsequent "hard" action implemented in 2018, which made the change permanent (see other chapters for a detailed discussion) and was an essential complement to implementation of the Madrid Central scheme.

Within Distrito Centro, over this last year there have been a number of smaller-scale "soft" actions (or "tactical planning" actions, as they are also called).

The move also coincided with the first applications of Scenario 3 when levels of air pollution (mainly NO2) exceeded the levels established in the Protocol by the previous administration. Although Scenario 3 situations trigger intense restrictions (only 50% of cars are allowed to run on any given day inside the "central almond", based on their registration number), several media surveys indicate a satisfaction rate with the move of around 65%.

INSTRUMENTS OF STRATEGIC PLANNING

Mobility was undoubtedly one of the aspects that was developed least in the 1997 General Planning Scheme for Madrid. Among the measures proposed was a Special Theme Plan (STP) on deterrent car parks. However, the plan was never drawn up.

Nonetheless, certain guidelines have been followed, almost implicitly. These criteria were clearly set out in the article by Pedro García Alarcó, head of the Methodological Area of the Municipal Office for the Plan, in his 1993 article on "Mobility management and road space management in the progress report on the General Plan".[1] The article lists a number of measures, including a preliminary study of park-and-ride schemes, which was meant to serve as the basis for the subsequent STP. Among other measures, two specific ones are proposed for Distrito Centro: "a framework of road coexistence capable of freeing up 6% of the road surface in the centre occupied by improperly parked vehicles" and the "replacement of 30% of kerbside parking with (underground or multi-storey) car parks for residents" as part of what was called a "policy for recovery of spaces" which, together with other specific "traffic calming" measures, were advocated in that report. In the document as finally approved, these criteria were to a great extent watered down, although it is true that most of the actions analysed—especially the largest ones (Dos de Mayo, Lavapiés, Pez/Luna, Letras) include the removal of parking spaces on the public highway (albeit in the case of some actions no quantitative data has been made available, perhaps out of fear of sparking controversy among local people)

In the case of the interventions that were eventually implemented, both the systematic use of physical elements (reduction of traffic and parking space with strict kerbside parking strips and turning radii, "donkey's ears", bollards, etc.), to prevent the possibility of illegal double parking, and the widening of pedestrian spaces or, to a lesser extent, the planting of trees between the rest areas, have resulted in a systematic reduction in the number of ground-level parking spaces. There has been some attempt to make up for this move with the creation of new underground car parks (the clearest case is the car park included in the Lavapiés RPA). However, in many cases, this alternative has proved unviable due to the small size of public spaces in the District. A proposal has therefore been made for automated car parks (this option was studied and rejected for the Plaza de Joan Pujol in Malasaña). To date only one car park of this kind has been created, in Calle de la Alameda, which has suffered frequent operating problems. Despite this particular approach of reducing ground-level parking spaces, which has been shown to be one of the most effective measures for disincentivising the use of private vehicles, the measure has its limitations (in terms of available spaces and financial costs) and must necessarily be complemented with measures at source. It was not until 2016 that a Deterrent Car Park Plan, (DCPP) was undertaken, envisaging the creation of 12 such car parks in the area of the M-40. The new car parks will be situated at the following sites: Pitis (M-40), Paco de Lucía (M-40), Fuente de la Mora (M-40), Valdebebas (M-11), Canillejas (A-2), Estadio Olímpico

1 GARCÍA ALARCÓ, P. (1993) "Gestión de la movilidad y gestión del espacio vial en el Avance del Plan General". Urbanismo COAM journal, nº 20, September 1993.

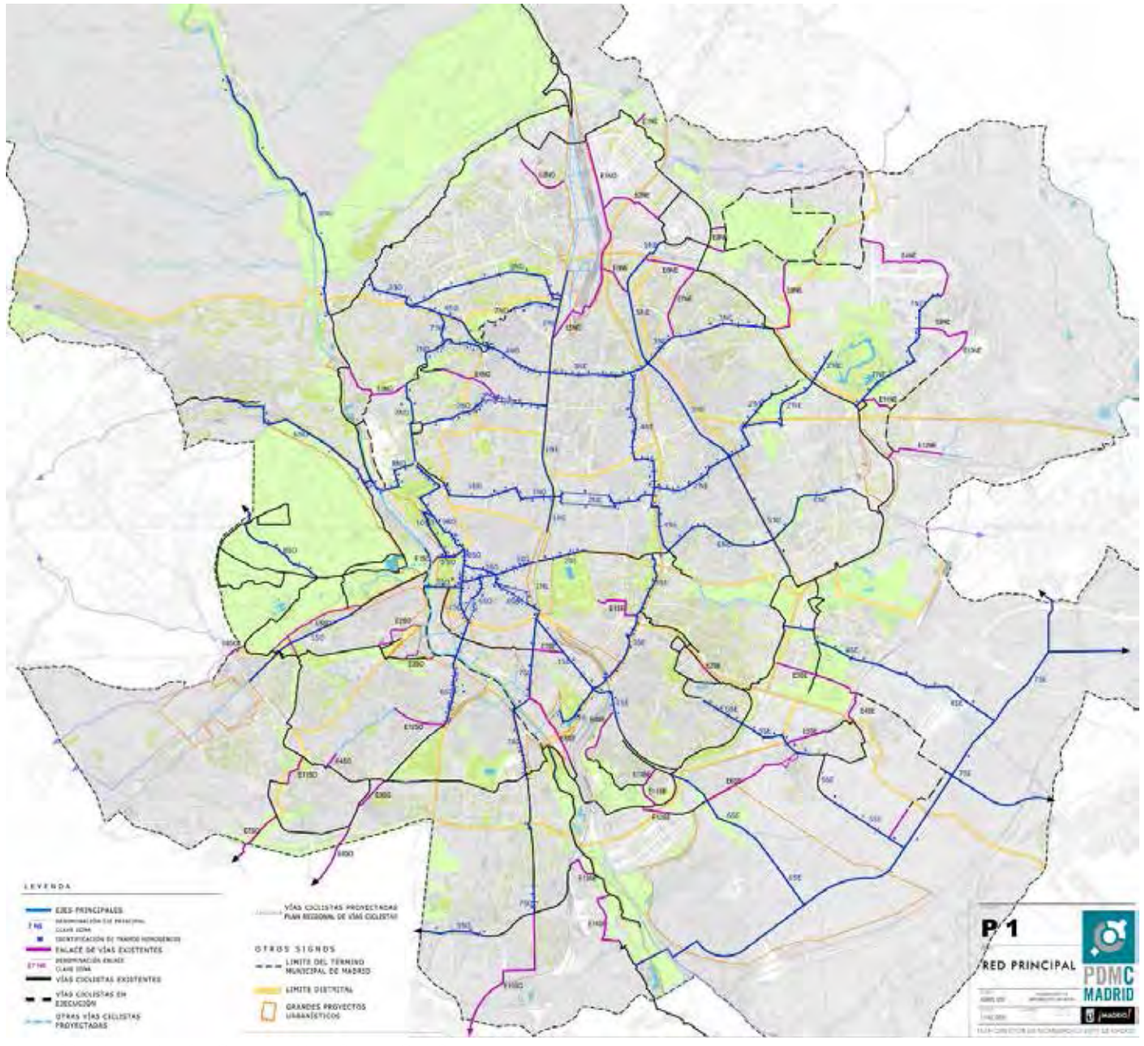


Figure 33. Master Plan for Cycle Mobility - Source: GEA 21

(A-2), Santa Eugenia (A-3), San Cristóbal (A-4), Villaverde Alto (A-42), Villaverde Bajo Cruce (A-4), Aviación Española (A-5) and Colonia Jardín (M-502/M-511). In total they will have 9,570 places, and in all cases will have the possibility of a modal interchange with the suburban rail or Metro line. The plan is one of the measures set out in the Plan A for Air Quality (analysed below) which will be implemented in collaboration with Ministry of Economic Development, the Community of Madrid, the Regional Transport Consortium, Metro, ADIF and RENFE suburban rail.

Because of this situation, in which relatively little importance is given to aspects of mobility in the 1997 General Plan (and in general aspects related to sustainable mobility in the urban political agenda), compared to actions involving the execution of large-scale infrastructures, there have been a large number of strategic planning documents affecting the public space and mobility, which have had varying success, but which are in all cases, demanding. Let us now look at some of the key instruments involved.

Cycle Mobility Action

Firstly, it is important to mention the incipient cycle mobility network currently being created in the city. Madrid is one of the few large cities in Europe (and Spain) that does not have an efficient network of cycle lanes to ensure the comfort and safety of bicycle travel. As well as the classical Nordic and central-European capitals (Copenhagen, Amsterdam, Rotterdam, Berlin, Stockholm, etc.) where cycling accounts for up to 30% of the daily trips taken, over the last 10 years other cities such as Paris, London, Barcelona, Seville, Vitoria and San Sebastian have also committed to the bicycle, as a clean, silent, non-polluting form of transport that occupies little space (in motion and parked) which is very versatile and well-suited for urban distances of between 1-2 km and 10-12 km. Some of the actions in these cities are mentioned in the International and National Comparison sections.

In Madrid the rate of mechanised mobility has rocketed, rising by nearly 60% in just eight years—from 1996 to 2004 (the date of the most recent mobility survey)—to 10 million trips per day (an average of 1.75 trips per inhabitant per day). Private transport—fundamentally by car—has risen even more sharply, up 72% over the same period, to more than 5 million trip per day, for the first overtaking the figure for public transport (4.93 million).[2]

In this context, support for alternative forms of transport, particularly the bicycle, is a key aspect for a city such as Madrid, if it is to keep up with developments elsewhere and reduce its very high levels of atmospheric pollution, caused mainly by automobiles.

Between 2002 and 2007, partly coinciding with the construction of the M-30 tunnels, a 64-kilometre "Cycling Green Ring" was created around the city. The circuit fairly wide, with a radius of around 10 km, which means that it is essentially restricted to weekend sports cycling, although it is progressively being used on a daily basis by users accessing schools and work centres in the immediate vicinity. The Cycle Ring, which includes a pedestrian lane, is a sort of linear park running around Madrid linking some of the most important green zones in the city.

2 LÓPEZ DE LUCIO, R., "Una movilidad desbocada: en torno a los resultados de la Encuesta de Movilidad de 2004 en la Comunidad de Madrid", Urban nº 12/2007, p. 156.

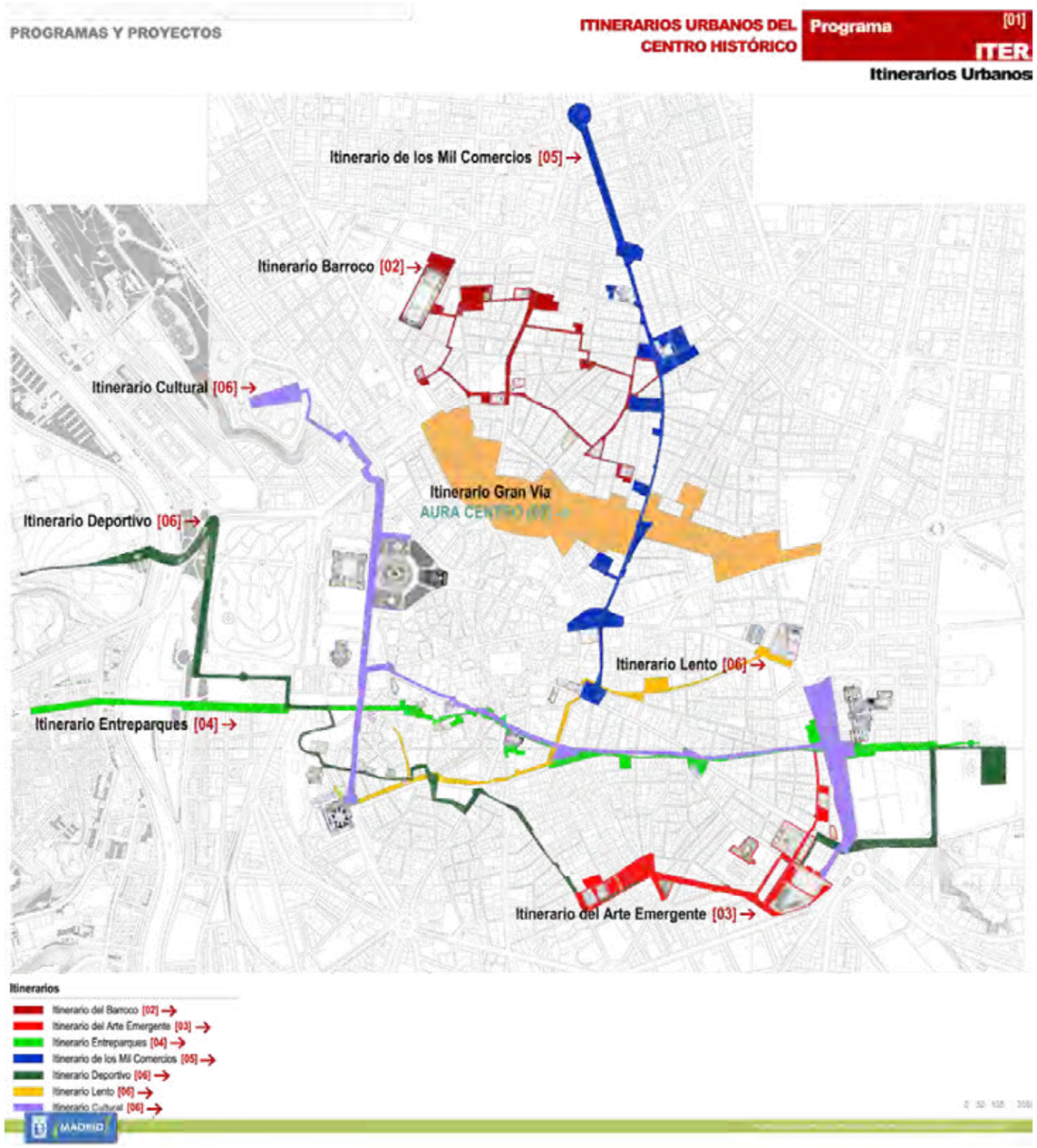


Figure 34. Urban Landscape Quality Master Plan. ITER Programme - Source: Francisco Pol Méndez

Master Plan for Cycle Mobility

The Master Plan for Cycle Mobility (MPCM) was passed in May 2008.

The 2008 Master Plan proposed a basic network of new cycle paths with a total length of 575 km, divided into three categories, main axes (147 km), links with existing paths (52 km) and a secondary network (154 km). The Plan establishes that the space needed to create the cycle paths will be obtained first from the existing roadway and where necessary from footpaths. It is precisely this issue—the way in which the space is obtained for bicycle use—that has sparked the most controversy.

Of the planned paths, by June 2010 a total of 216 km had been created, including the 64-km Cycle Ring. It was initially intended to complete the plan in eight years, at an average rate of 30 km of cycle paths per year. Initially, this figure might have seemed overly modest given the stated aim of rapidly encouraging cycling in the city; however, due to budget constraints, the actual pace has been even slower. Since 2008, 40 km of cycle paths have been created. This includes actions such as the Ciudad Universitaria route, the sections linked to the Madrid-Río operation (mixed pedestrian/cycle routes) and extension of the cycle path from Calle de O'Donnell to the Cycle Ring (allowing direct connection to the Retiro Park and the city centre). The most important action has been along the Calle Mayor/Alcalá axis, which runs through Distrito Centro. Here a "soft" solution has been used, with no physical separation. This runs contrary to the recommendation of the MPCM, especially for streets with high levels of traffic, which argues that the strong perception of risk might put off potential users.

As well as the network, the Plan also makes some complementary proposals, which are important to the development of a new cycling culture. These include adaptation of the existing legislation to allow for use of this new vehicle on the public highway; campaigns to promote cycling as a mode of urban transport; and incorporation of bicycle use into municipal management through the creation of a Technical Committee and a Monitoring Committee. Until 2015, the proposed network remained largely undeveloped, due to the constraints imposed by the economic crisis. However, since the election of the new municipal government, a significant number of sections set out in the MPCM have been completed and the MPCM itself has been partially updated. One of the most significant moves—particularly in terms of its impact on Distrito Centro—is the operation affecting the entire Bulevares axis, Calle de Génova to Calle de Marqués de Urquijo, which is discussed in detail in subsequent chapters. The other most important routes which have been completed are probably Calle de Santa Engracia (with perhaps the least controversial technical solution), Puerta de Toledo and Calle de Pintor Rosales

Perhaps the most noteworthy feature is the effort put into developing the necessary tools for introducing bicycle use as a mode of urban transport. A manual for signalling cycle paths, a protocol for drafting projects and a catalogue of construction and design solutions (especially at junctions) have all been drawn up and are subject to constant review. In addition, as proposed in the MPCM, a Bike Office has been created, although for the time being it only consists of a website; the first phase of a city-wide programme of bicycle parks has been completed, and the council has launched BiciMad, a system of public electric bicycle-rental for Madrid. Initially introduced only in the "central almond", the scheme now has 2,028 bicycles, and 4,116 mooring points in 165 stations. The initiative has been relatively successful, although the EMT has had to take over management from the original concession, and the scheme will shortly be taken under direct municipal management. Since these measures were taken, the results of BiciMad have improved steadily,

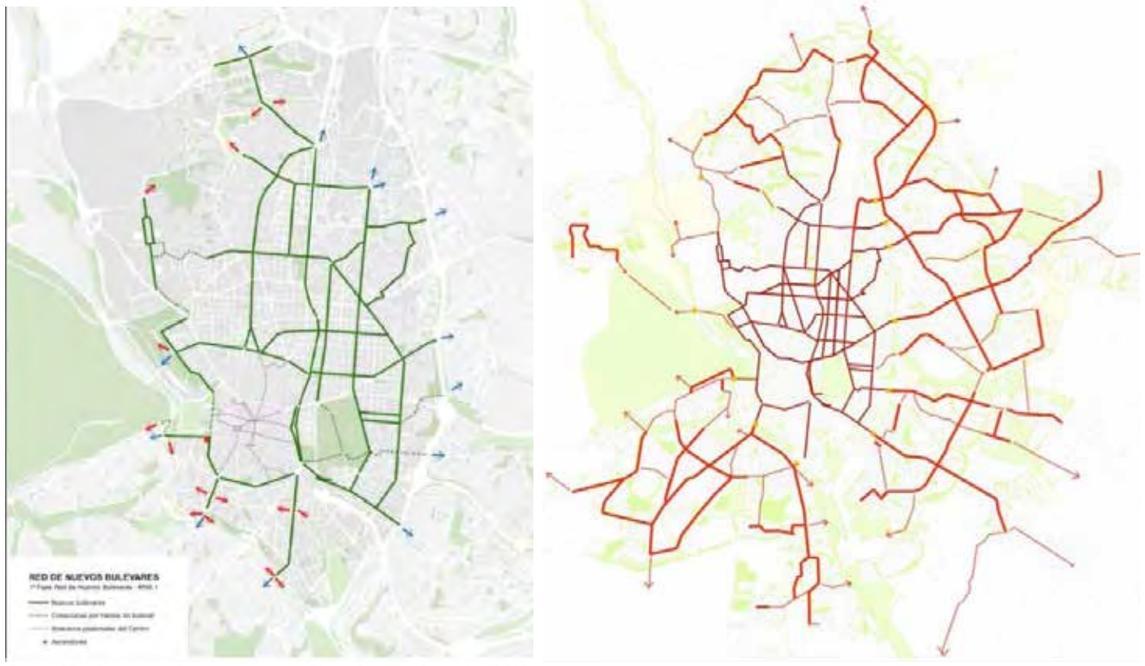


Figure 35. Boulevard Recovery Master Plan - Source: Castejón (2012)

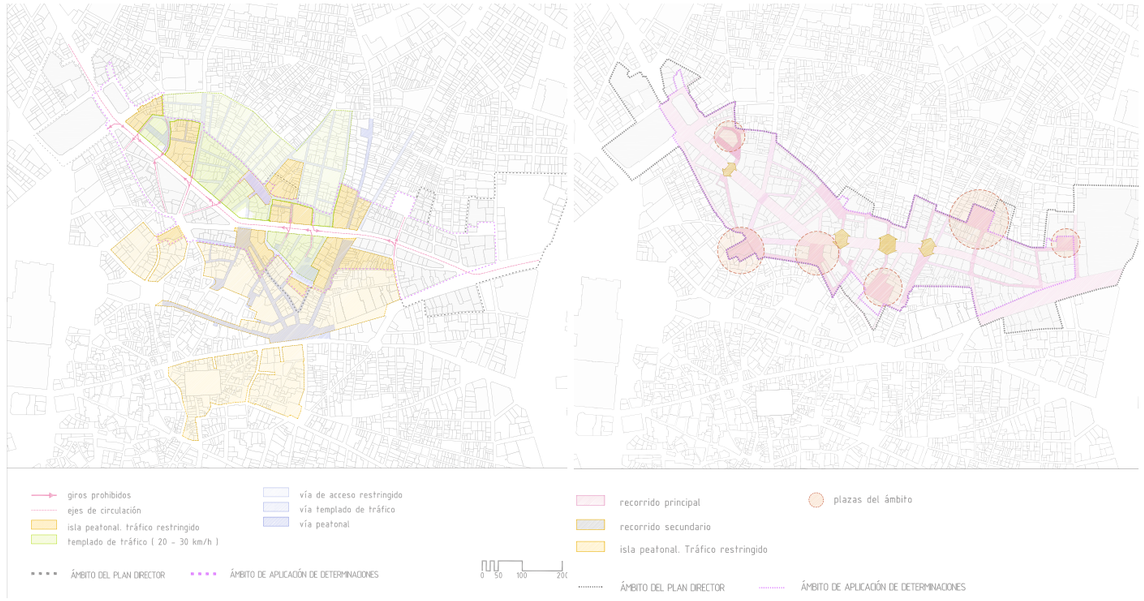


Figure 36. Gran Via Master Plan. Mobility Actions - Source: Ayuntamiento de Madrid.

with record numbers of trips in September and October 2018. Already, an extension to the network is being prepared which for the first time take it to the area beyond the M-30. Perhaps the most important measure adopted to date is the amendment to the Madrid Mobility Bylaw, passed in November 2010, which recognises the bicycle as a vehicle with full rights to travel in the centre of the lane.

Plan of Cultural Trails. Distrito Centro Office

In December 2008, the City Council of Madrid, through its Distrito Centro Office, developed a Plan of Urban Trails in the centre of Madrid. The purpose was to identify, through urban actions, a series of routes capable of establishing a special relationship between city and citizen. They include a sports trail, a cultural trail and a "slow" trail, offering different perspectives of the city for people to discover.

As part of the ongoing close collaboration between Madrid City Council and the Official School of Architects of Madrid in the area of architecture and urban planning competitions, the two institutions signed an agreement to organise a competition to meet the objectives of the Urban Trails Plan through specific proposals. This competition was called in spring 2006. The aim of the competition was to define the routes envisaged in the Urban Trails Plan developed by the council's Distrito Centro Office. The winning project was submitted by Jose Maria Mateu. It proposed 3 trails, differentiated by speed of travel (a cultural trail, a sports trail, and a "slow" trail). All three would be non-exclusive pedestrian routes. However, the plan was not implemented, and was included in the ITER programme of the Urban Landscape Quality Plan.

Urban Landscape Quality Plan

In January 2009 the Urban Landscape Quality Plan (ULQP) was passed. This was the result of nearly a year and a half of continuous and combined work by the various Areas of Government with the consultancy team, led by Francisco Pol; the final draft of the approved document was drawn up by the Area of Urban Planning and Housing. The Plan considers the specific measures established in the 2000 European Landscape Convention (or Florence Charter), which Spain signed up to in 2007. The ULQP, which does not represent a development on the Special Thematic Plan for the Promotion and Protection of Landscape Values (PET15) established by the 1997 General Planning Scheme, sets a number of operating objectives: a diagnosis of homogenous landscape units; definition of suitable zoning; coordination in adaptation of the large number of legislative items (various articles in the General Plan and up to eleven different municipal bylaws, instructions and standards) that affect the landscape; and the establishment of a temporary programme for this adaptation.

The ULQP sets out a series of recommendations (of a general nature) and directives (more specific and binding) intended to guide the actions of the municipal services, a Programme of Action, and a series of specific programmes on particular territorial areas (areas of urban reclassification or AURAs; axes of landscape structure; trails, infrastructure rims, cornices and viewing points, gateways to Madrid, etc.), as well as the extension, classification and articulation of the network of green spaces, which, as we shall see, was taken up again in the Central Madrid Strategy Plan (CMSP).

In terms of the transformation of mobility-related aspects of the public space, the most interesting programme in the ULQP is the ITER on pedestrian trails. This lists the trails previously proposed by the Distrito Centro Office (cultural, slow and sports), and others of a similar nature (the emerging art

Figure 37. Madrid Centro Project. Summary of interventions - Source: Ezquiaga Arquitectura

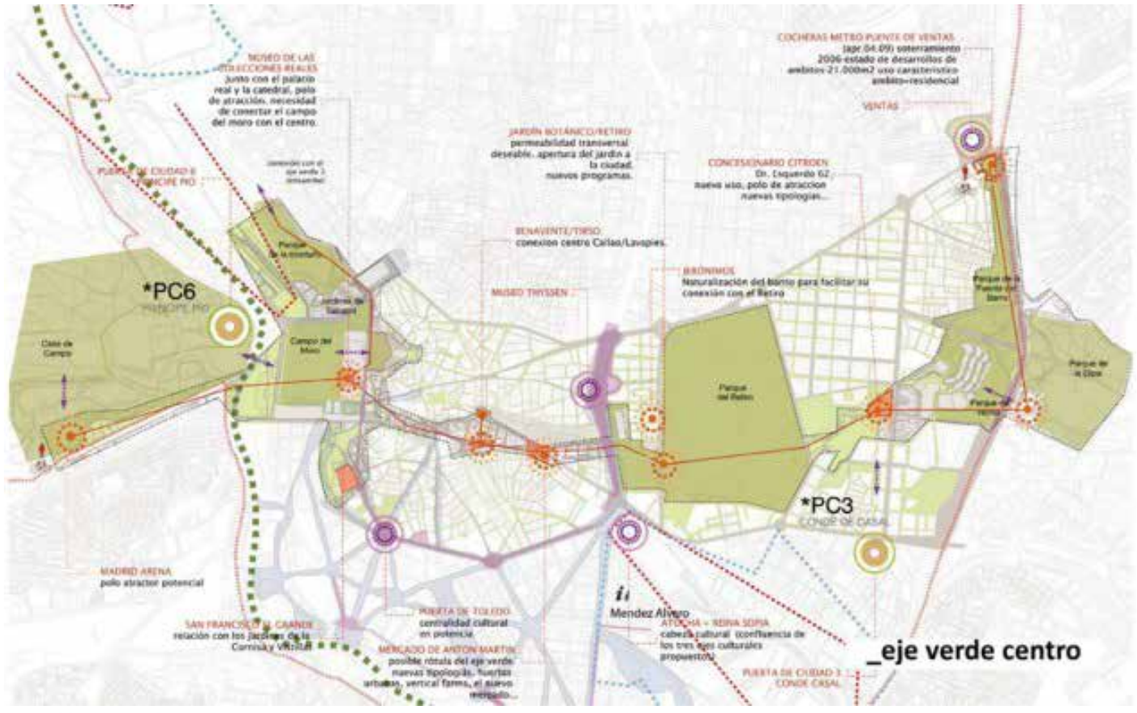


Figure 38. Madrid Centro Project. Distrito Centro Green Axis - Source: Ezquiaga Arquitectura

trail, along the Calle del Doctor Fourquet, which has since developed spontaneously; and the Baroque architecture route, which seeks to valorise the Conde Duque Centre). The "1000-shop axis", associated with pedestrianisation actions in Calle de Fuencarral and Calle de la Montera has also become particularly significant.

Given its ambitious targets and the necessary involvement of different actors, requiring extensive coordination, the ULQP has a medium-long term perspective. Launch of the plan has been delayed, but it has nonetheless been taken as the starting point for other actions, such as the new Urban Regeneration Strategy (Madrid REGENERA).

Boulevard Recovery Master Project

In 2010 the Area of Urban planning drafted the Master Plan for the Recovery of Boulevards, with the participation of the Instituto Juan de Herrera. The main purpose was to define a network of new boulevards (green soft mobility axes) which would structure the city of Madrid, increasing the space given over to traffic and recreation, improving the landscape quality of the boulevards and their environs, extending the green and tree-covered surface, fostering compatibility between the different functions suggested by the environment, particularly mobility, and boosting economic and social activity.

The new boulevards would not follow the model of the nineteenth-century boulevards, but would instead be wide urban paths with a high degree of landscape and environmental quality, which would fulfil the functions of urban structure and space for walking, leisure and local social relations. They were to allow for balanced co-existence of a number of elements: a wide pedestrian platform, in the centre or side, which would be very accessible and continuous; an important area of vegetation and/or woodland; separate strips for bicycles, public transport and automobiles. The action targets streets of around 30 m in width (similar to the widest streets in the Ensanche area), with between 50% and 75% of the surface area given over to pedestrians and sustainable modes of transport. The plan was included in the review of the General Plan in the 2011-2015 legislature, when it was updated but not implemented.

Gran Via Master Project

In October 2009 another master plan was passed, this time affecting the axis of the Gran Via. It dealt not only with the public space, also including an in-depth analysis of uses in the area, particularly the very intense shopping activity.

Nonetheless, the Master Plan establishes a series of recommendations for improving pedestrian mobility (see figures below), amongst which the objective of valorising the public spaces at the rear of the Gran Via by way of connecting axes are of particular interest. The clearest example is Calle de las Infantas/Calle de la Luna, to the north of the main axis, between Plaza del Rey and Plaza Mostenses, passing through the Plaza de Vázquez de Mella (now Plaza de Pedro Zerolo) and Plaza de Soledad Torres Acosta (Luna). Some of these actions have already been discussed in the chapter on Actions in Squares. The idea of valorising these squares (together with those to the south of Gran Via, Plaza de Santo Domingo and Plaza del Carmen) has again been taken up by the present administration, which has included them as an area of action for the upcoming Europan competition.

Plano 8. Actuaciones de mejora peatonal en la última década

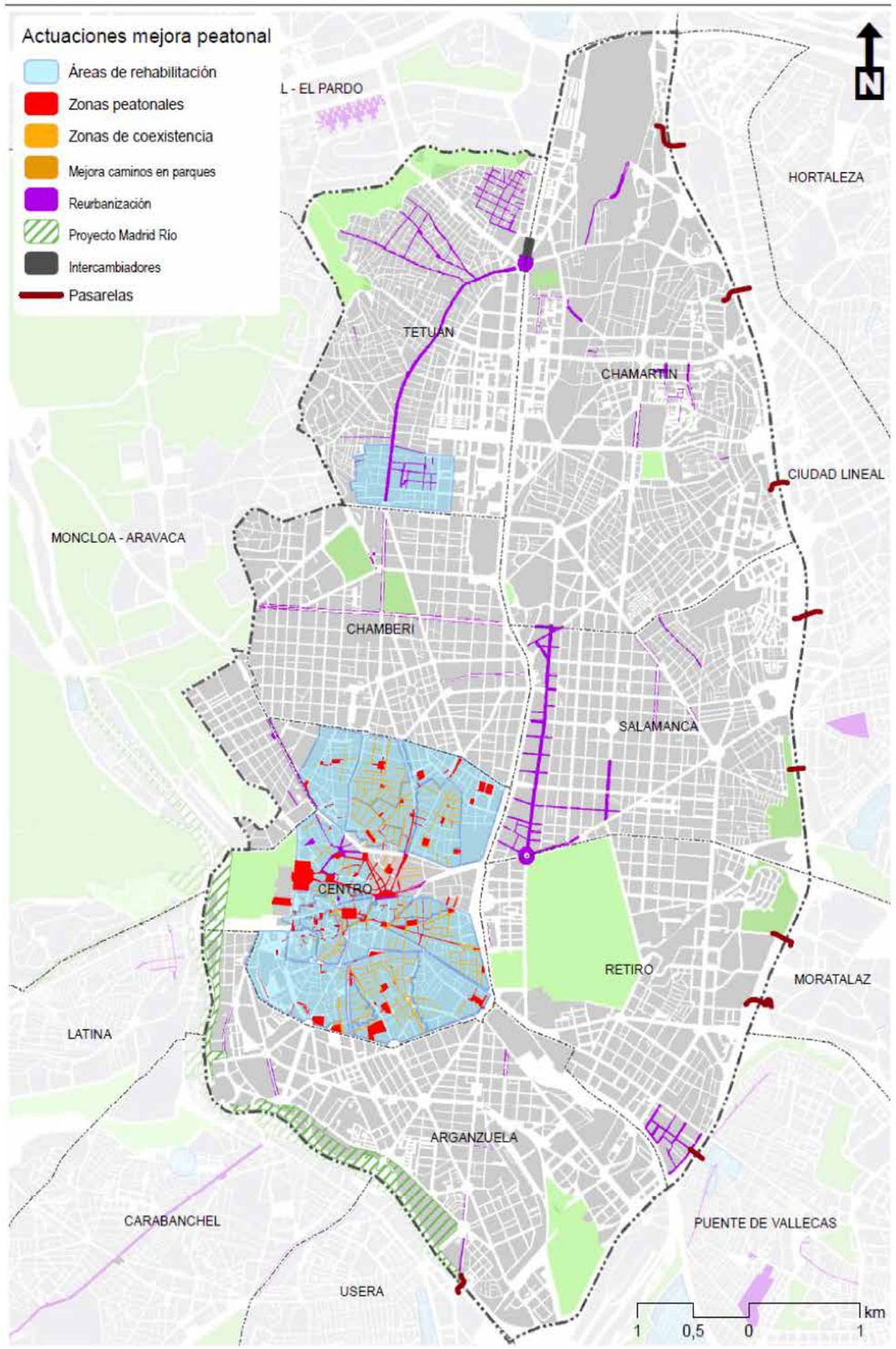


Figure 39. Strategy for the creation of a network of pedestrian trails in the "central almond" of Madrid. Prior actions - Source: GEA 21

Madrid Centro Project

The Madrid Centro Strategy Plan, also known as Madrid Centro Project (MCP) passed in 2010 and drawn up by a diverse team co-directed by José María Ezquiaga, Juan Herreros and Salvador Pérez Arroyo, was the first proposal for intervention in the twenty-first century to offer a joint perspective for the area within the inner ring roads. This so-called "central almond" includes the districts of Centro, Chamberí, Salamanca, Retiro, Arganzuela, Tetuán, Chamartín and part of Aravaca, in other words the historical centre, the nineteenth-century enlargement area or Ensanche, peripheral divisions and areas of growth from the first half of the twentieth century. The MCP is a strategy document and its proposals are still largely unconsolidated. Some important proposals include: commitment to a drastic reduction in motor transport, with a major reclamation of public space for pedestrians, along similar lines to those proposed for Barcelona by Salvador Rueda, a member of the project's drafting team; the attempt to "naturalize" the city centre, with the establishment of "green axes" connecting consolidated urban areas with the main green zones; identification of a shortage of spaces for creation; and the identification of "areas of opportunity" for specific actions involving providing new amenities — in general, large obsolete publicly-owned facilities.

In Distrito Centro, the MCP proposes extending both the length and the characteristics of the already consolidated Prado-Palacio pedestrian route as one of the axes of re-naturalization, connecting several of the city's principal green zones: Fuente del Berro and Pinar de la Elipa in the east with Casa del Campo, Campo del Moro, and Parque de Oeste in the west, via the Retiro Park.

For this axis to function properly, it is essential to resolve the connection between the upper platform of the cornice (at Calle Bailén) with the Manzanares waterfront. This action was included in two of the proposed actions for this legislature, redesign of Plaza de España (the winning project in the International Competition of Ideas, directed by Fernando Porras, is currently being developed—see below) and the installation of lifts on the viaduct, currently at design phase.

Strategy for the Creation of a Network of Pedestrian Trails in the "Central Almond" Area

The document, which was not approved until December 2012, sought to bring some consistency to all the different actions already conducted or planned involving mobility-related transformation of the public space. One of the stated intentions of all of these interventions is to improve citizens' quality of life through traffic calming and pedestrian prioritisation on roads that were previously dominated by motor vehicles, without necessarily completely excluding all motor traffic. However, no hierarchy or order of priority had previously been established between the different operations.

Some of the actions, as we have seen, involve conventional pedestrianisation (e.g. Calle del Arenal and Calle de Fuencarral), Others, however, follow other models of intervention, such as the pedestrian improvements in Plaza del Callao and Plaza de Tirso de Molina, on the Santa Barbara boulevard and the section of Calle de Fuencarral between Quevedo and Glorieta de Bilbao and the traffic regulations in the so-called Resident Priority Areas (RPA) in Letras, Cortes and Embajadores.

As explained in the strategy document, as well as with the actions already mentioned the various departments and government areas of the city council have prepared other plans and proposals for road remodelling

Plano 41. Red Peatonal Básica

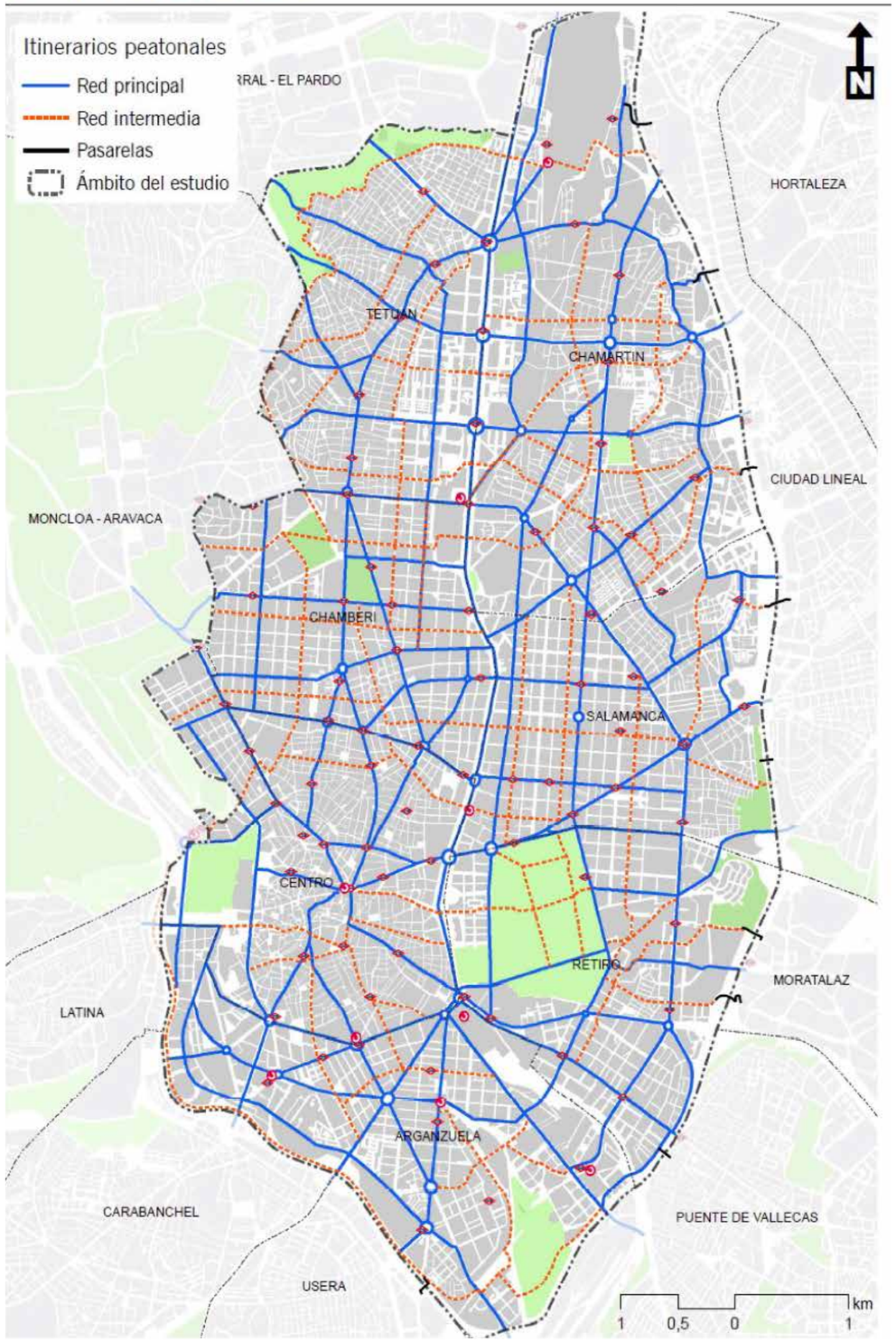


Figure 40. Strategy for the creation of a network of pedestrian trails in the "central almond" of Madrid. Basic Pedestrian Network - Source: GEA 21

with the same objective of improving pedestrian quality. The strategy explicitly sought to integrate some of those already analysed of a more project-oriented nature (Master Plan for Cycle Mobility, Master Plan for Urban Landscape, Master Plan for Recovery of Boulevards) and merge them with others of a more regulatory nature, which have largely not been publicised externally: the Master Plan for Free Public Space, the review (then underway) of the Instructions for Design of Public Roads, and in particular, the document entitled Network of Priority Pedestrian Trails in Central Madrid: Compatibility Criteria.

The latter was the first systematic study of pedestrian mobility in the Central District, and marked—albeit in a more ambit—a direct forerunner of the Strategy.

The Strategy seeks to go further, enlarging on previous deliberations and actions related to pedestrian improvement, and systematising them within the entire "central almond", comprising seven of the twenty-one districts into which the city is divided.

This document finally traces a Basic Pedestrian Network for the entire "central almond" (extension to this area makes more sense in terms of scale than limiting it to Distrito Centro, but it nonetheless requires additional connections to the peripheral districts). The Basic Pedestrian Network consists of two orders, which make sense of the actions previously inaugurated (for example, the main axis of Calle de Fuencarral, continuing on towards Atocha, and the secondary Calle del Conde Duque-Calle Colon).

Sustainable Urban Mobility Plan

In December 2014 (again belatedly), Madrid finally drew up a Sustainable Urban Mobility Plan (SUMP) as many other European and Spanish cities had done before. The document was drawn up at the behest of the European Union, but it had a very small budgetary allocation, and mainly included actions taken from more minor documents. For example, on the matter of pedestrian mobility, it referred almost exclusively to the Strategy for the creation of a network of pedestrian trails in the "central almond". Much the same occurred in the area of cycling, where the plan referenced the Master Plan for Cycle Mobility. In short, this was an unambitious document which could have been of key importance for promoting crosscutting actions of decisive interest for mobility—in the Central District in particular, but more generally in other districts within the "central almond"—that lay outside the individual competences of the District Council. Such actions could have included the creation of park-and-ride schemes, coordinated with new express bus routes, coordination with regional and state authorities for the development of BUS-HOV lanes in other radial routes, following the successful pioneering experience on the A-6, which has not been replicated, etc. In 2018 submissions were invited for a competition to update the document and make it more ambitious..

Air Quality Plan

The preliminary draft of the Air Quality Plan (or Plan A) was presented in November 2016. The presentation was not without controversy, coinciding as it did with application of air pollution scenarios in which restrictions would be placed on private traffic, as established in the protocol approved (but not implemented) by the previous administration.

The overall objective of the plan, which must be implemented to comply with European legislation, is to

"ensure protection of health against the effects of atmospheric pollutants, to contribute to fighting climate change by reducing greenhouse gas emissions (GHG) and to promote urban resilience to the effects of climate change". It sets a number of specific goals:

- Compliance with European and domestic legislation on air quality.
- Achievement of levels of air quality in terms of particulates that are in accordance with the guideline value established by the World Health Organisation (WHO).
- Compliance with GHG reduction targets (2020 – 2030) in line with the Paris Agreement and the EU Agenda on Climate Change, as well as the Covenant of Mayors for Climate and Energy (to reduce GHGs by 40% in 2030, as compared to 1990).
- Compliance with the commitment to reduce emissions caused by urban mobility by 50% in 2030, as compared to 2012.

A sector plan such as this might not be expected to affect transformation of the public space. However, it may become a lever for the increased renovation of public spaces over coming years, especially in the case of the first five measures set out in the Plan, namely:

- The creation of an area of access restricted to private vehicles (except residents) with priority given to pedestrian mobility, bicycles and public transport, which will include practically the entire area of Distrito Centro (see figure). After a number of changes, this scheme has finally been dubbed the Zero Emissions Central Area (Área Central Cero Emisiones), better known as Madrid Central
- Redesign of lane distribution on the main traffic routes connecting outlying districts to the centre, reducing the space for cars in favour of more sustainable means of transport.
- Prioritisation of pedestrian mobility. This proposal defines a new model of public space linked to urban regeneration in residential areas. A series of actions which directly affect local mobility in neighbourhoods, such as traffic calming (30 Km/h speed limit)
- Improvement and extension of the cycle network and cycling mobility, with a review of the existing network and extension of the cycle network to include new cycle lanes.
- Extension of the public bike rental system and coordination with the system run by the Regional Transport Consortium of Madrid (CRTM), extending the BICIMAD network to high-demand areas, principally the area along and to the south of the river.

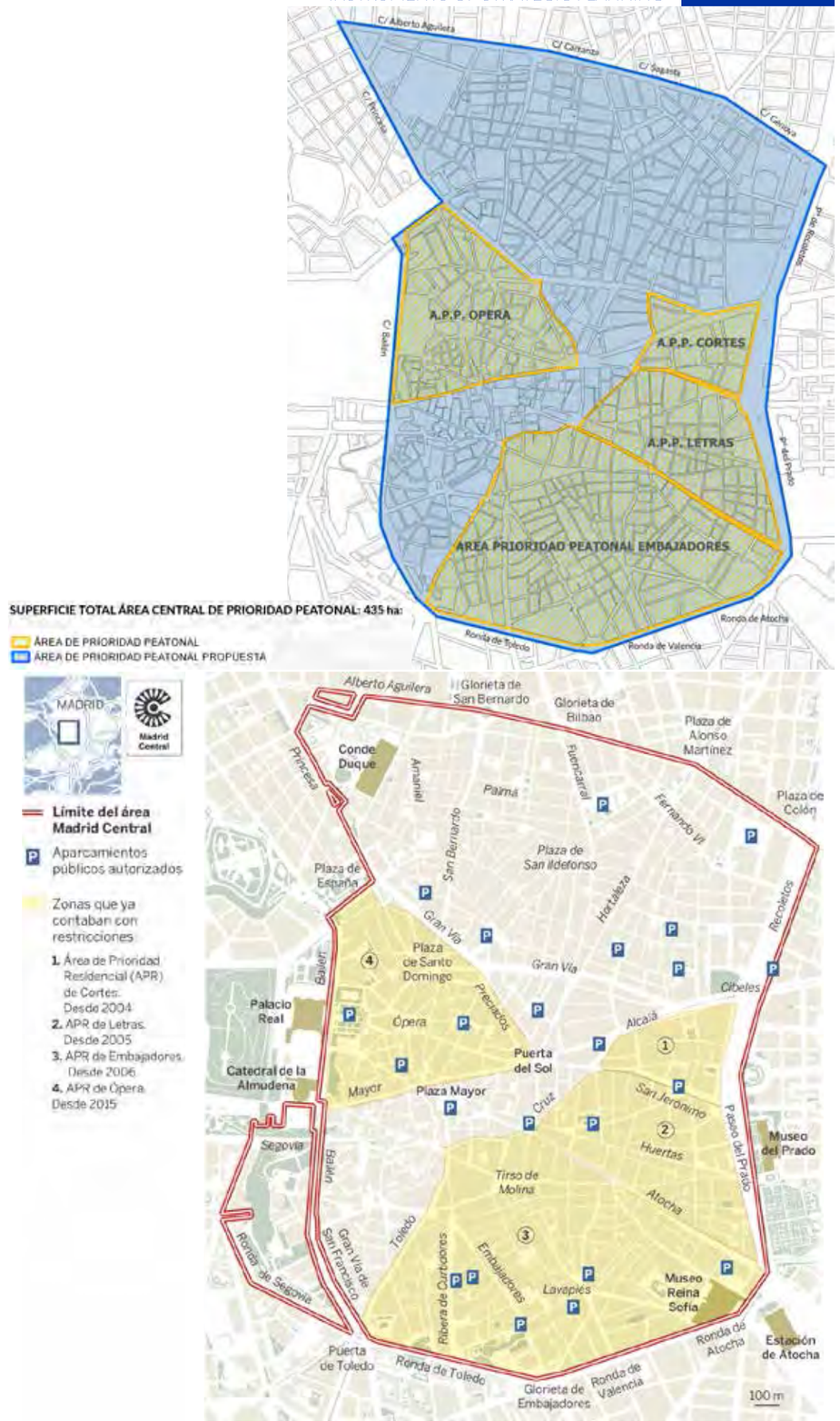
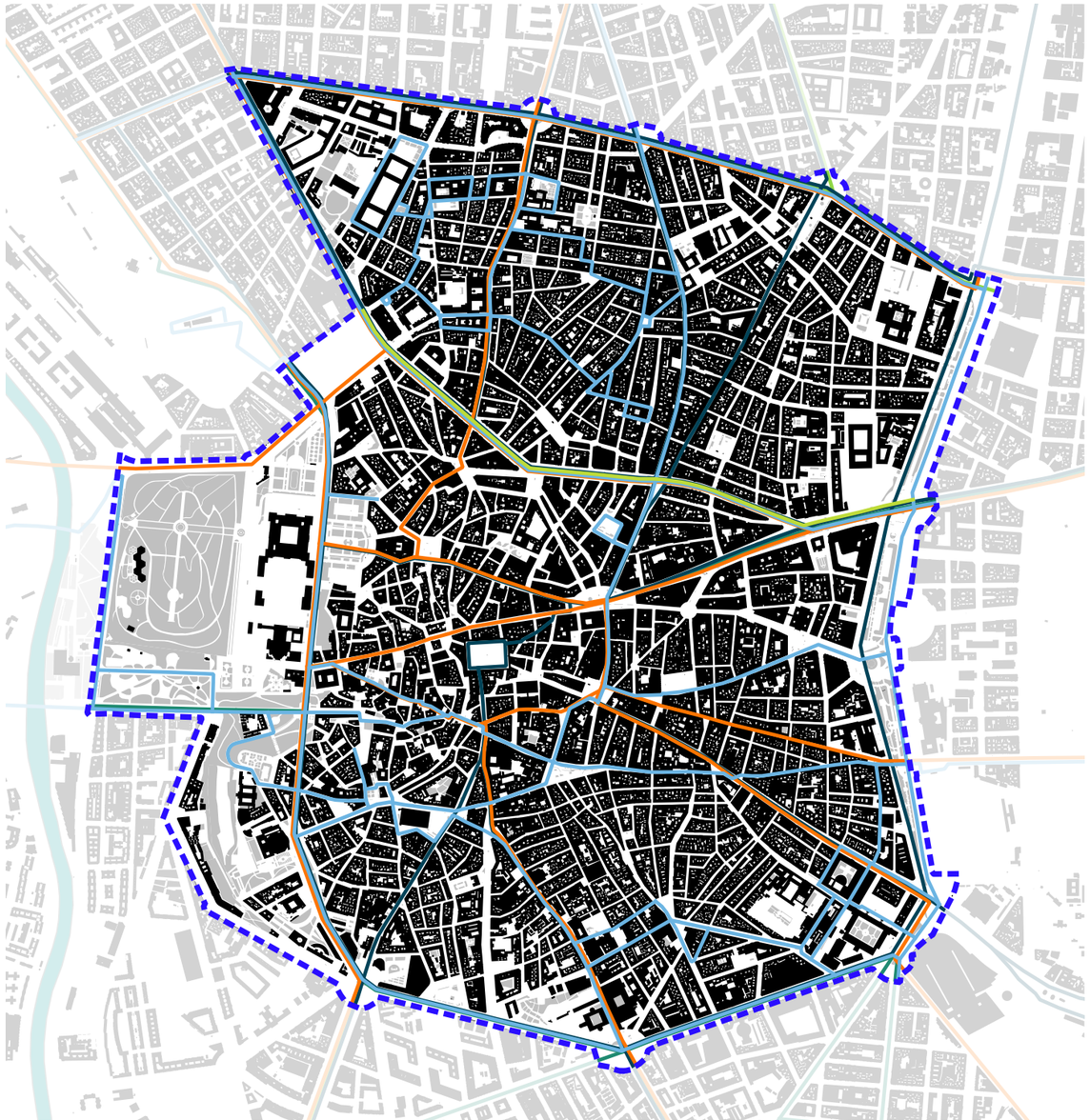


Figure 41. Madrid Central's initial and final delimitation:
Top: Initial delimitation. Air Quality Plan. Measure 1. Residential Priority Areas. - Source: Área de gobierno de Medioambiente y Movilidad. Ayuntamiento de Madrid.
Bottom: Finally approved delimitation. - Source: Ayuntamiento de Madrid. El País.



STRATEGIC ACTION AXES

- Strategy for the Creation of a Network of Pedestrian Trails in the "Central Almond" area of Madrid (2012)
- Boulevard Master Plan (2010)
- Gran Via Master Plan (2009)
- Madrid Urban Landscape Quality Plan (2010)
- Madrid Centro Project (2011)
- Projects for Bicycle Lane (2016)

1 Strategy for the Creation of a Network of Pedestrian trails in the "Central Almond" of Madrid

2 Boulevard Master Plan

3 Gran Via Master Plan

4 Landscape Master Plan

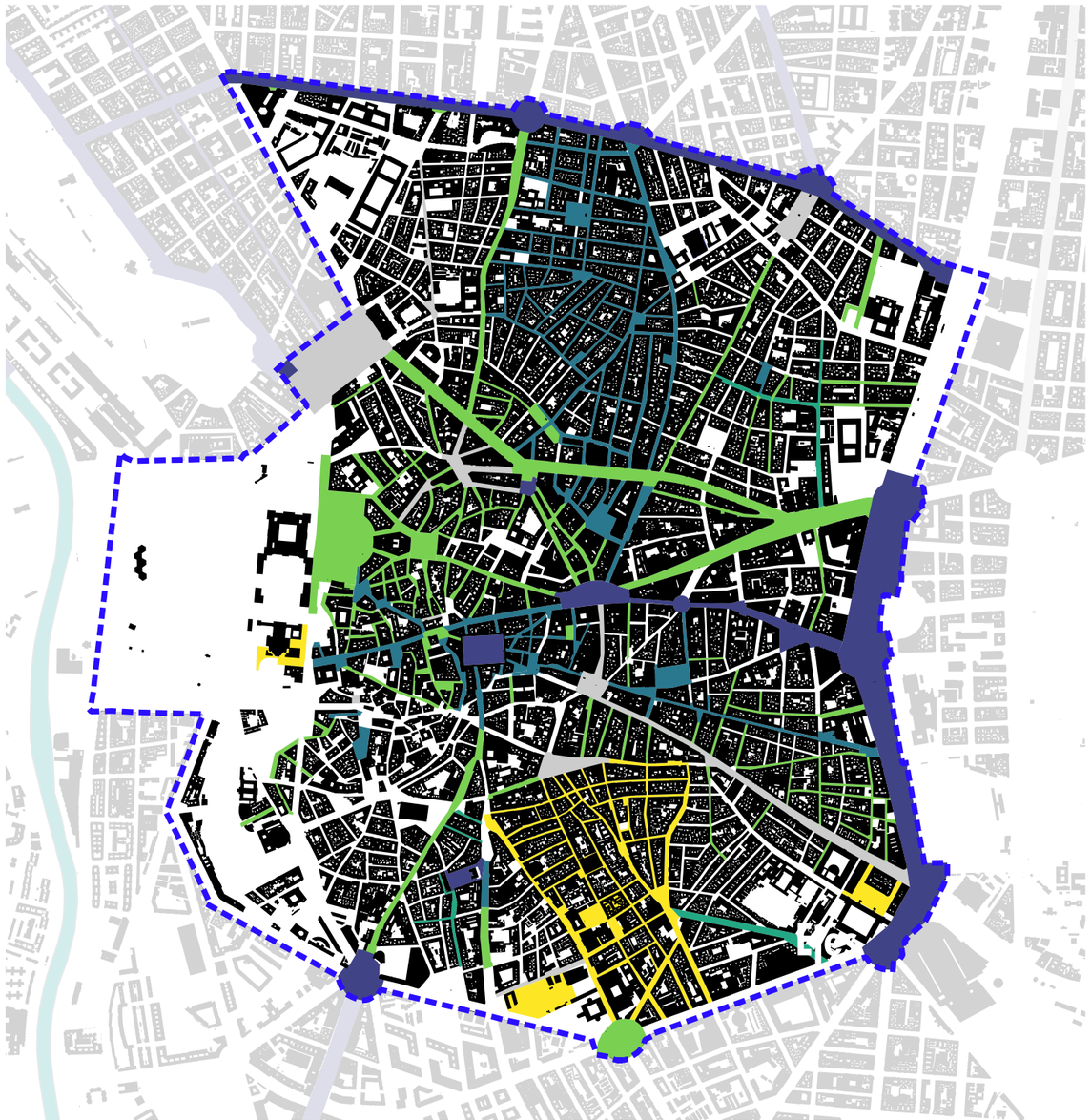
5 Madrid Centro Project

6 Cycle Lane Project

Strategic Axes

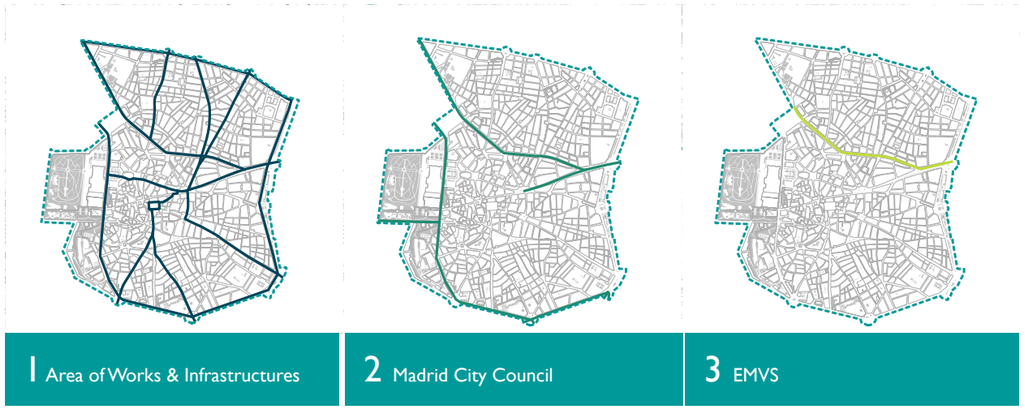
The studies accompanying the successive plans show a number of common trends running through all of them. What is most striking is that practically all the projects include the Gran Via as a space in Distrito Centro requiring regeneration. In 2009, a Master Plan was proposed specifically for the Gran Via, whose analyses have continued to be published in the years following.

There is also a clear common attempt to valorise the roads close to the edge of the district (Calle de Alberto Aguilera, Paseo del Prado/Paseo de Recoletos, and the Rondas (Ronda de Toledo, Ronda de Valencia and Ronda de Segovia), with the goal in all cases of increasing the pedestrian space.



ACTIONS BY COMPETENT BODY

- Unknown
- Madrid City Council
- EMVS: Municipal Housing and Land Company
- District Council
- Area of Works and Infrastructures
- Municipal Urban Planning Management Office

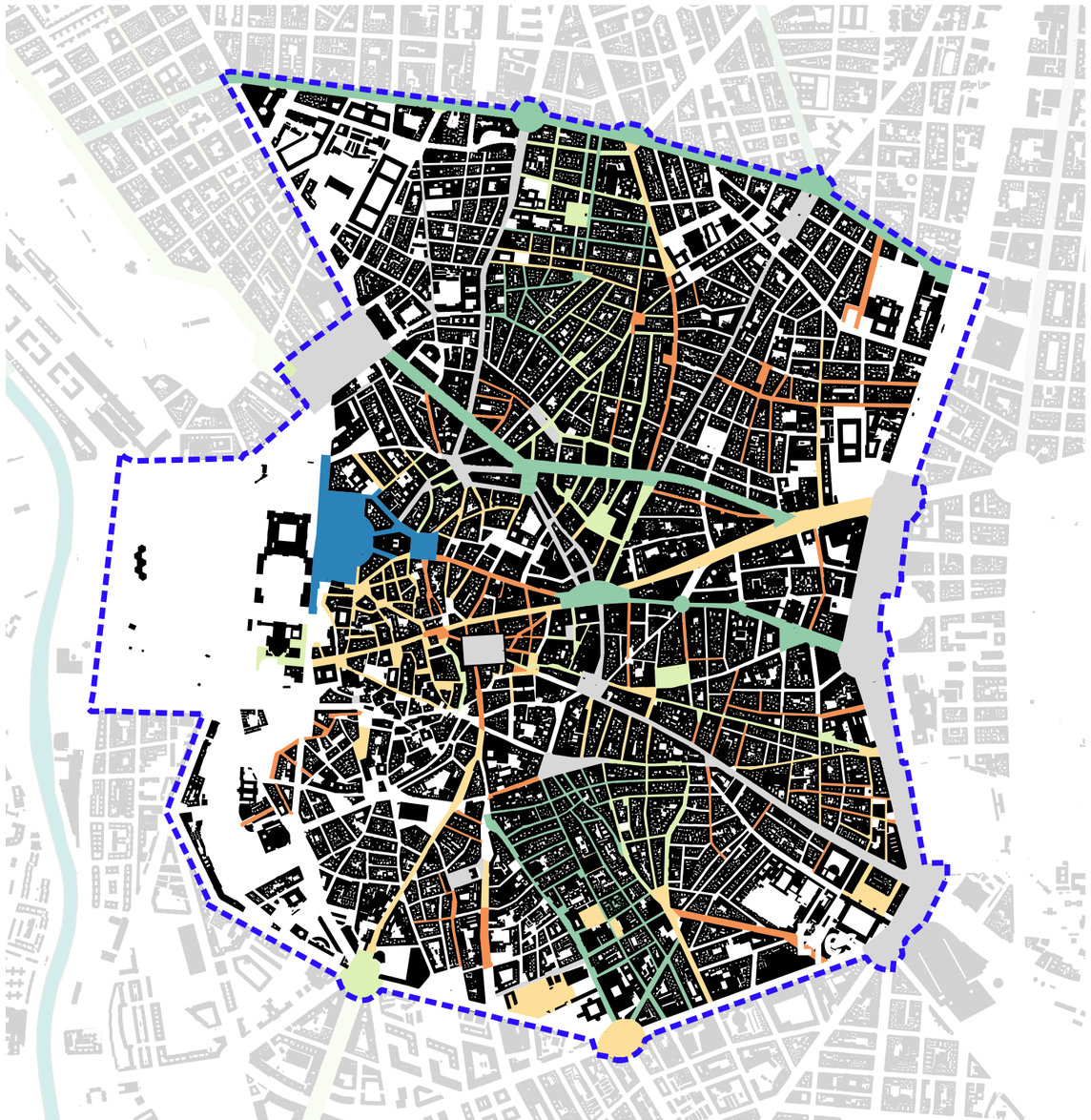


CLASSIFICATION OF ACTIONS BY AGENT

Of the various bodies authorised to undertake transformation of the public space, actions by the City Council's Area of Works & Infrastructures account for the largest surface area, which has on occasions been responsible for operations in neighbourhoods such as Palacio.

The other actions involving remodelling of neighbourhoods —Malasaña (in the Universidad quarter) and Lavapiés (in Embajadores)— have been carried out by the Municipal Urban Planning Management Office and the Municipal Housing Company.

There has been a clear trend for the city council to undertake work involving transformation of some of the most representative spaces in the city.



ACTIONS BY BUDGET

- Unknown
- Under €500.000
- €500.000 - €1.500.000
- €1.500.000 - €2.500.000
- €2.500.000 - €6.000.000
- Above €6.000.000

1 Under €500.000 €

2 €500.000 - €1.500.000 €

3 €1.500.000 - €2.500.000

4 €2.500.000 - €6.000.000

5 Above €6.000.000

6 Unknown

Classification of actions by Level of Intervention

Although in terms of the surface area involved, major differences can be seen amongst the different administrations, when it comes to public spending there is a relative balance between City Council, Municipal Housing Company, and Municipal Urban Planning Management Office. Total combined investment comes to over EUR 100 million, ahead of the figure for the Area of Works & Infrastructures.

The actions requiring the greatest level of investment have been the pedestrianisation of Calle del Carmen and Calle de Preciados, redesign of Carrera de San Jerónimo in the area around the parliament building and remodelling of Puerta del Sol and Plaza de Oriente.

Figure 42. Palacio de la Prensa - Source: Authors

RECENT AND PLANNED ACTIONS

The current municipal administration has recently completed an important number of actions, with others planned for the remainder of the legislature that will have an important impact on the transformation of the public space. These actions have largely filled in the "white areas" in which no comprehensive action had previously been taken (although in many cases, such as the Gran Via, some superficial interventions had been carried out).

Main Axes

Without doubt, the most important of these schemes has been the redesign of the **Gran Via**, completed during 2018. The footpaths on the street had already been widened at the end of the 1990s and an experiment in lane reduction, trialled in December 2016, was generally considered successful (see previous sections). Most of the strategic or sectorial planning documents analysed here (MPCM, ULQP, Boulevard Recovery Master Plan, Gran Via Master Plan, Strategy for the Creation of a Network of Pedestrian Trails in the "Central Almond", etc.) had already recommended actions on this avenue, involving the creation of a major east-west pedestrian axis in Distrito Centro.

In the version of the project that was eventually implemented, one lane of private traffic was eliminated, and one cycle lane added in each direction. In the section between Calle Alcalá and Plaza del Callao, both cycle lanes are unsegregated while between Plaza del Callao and Plaza de España, the upward lane is segregated (the criterion for segregation is a gradient of over 4%). These changes allowed footpaths to be widened, and the barriers separating them from the road to be removed, leaving a minimum 14 cm separation from the roadway. Other elements located on the footpath were rearranged and concentrated to create small rest areas. Improvements were made to pedestrian permeability. In the central sections, three new crossings were created, and others were widened. Another two were created at the ends of the street. One of these is at the start of Calle del Barquillo (not included in the project but covered by another parallel intervention), to enable pedestrians to cross Calle de Alcalá at that point as well as at the widened existing crossing at the junction of Calle de Alcalá and Gran Via (where the footpath was considerably enlarged). The other is at the junction of Gran Via and Plaza de España, with an X-shaped pedestrian crossing. Here, as at each of the 48 "Madrid Central gateways" rough paving has been laid as a mechanism to advise motorists that they are entering the restricted traffic zone.

Partial interventions have also been included in recently developed spaces, such as the junction with Calle de la Montera and the Plaza del Callao. In the Red de San Luis (the end of Calle Montera), the regional government is building a new suburban rail entrance which is intended to take pressure off the Puerta del Sol station. The budget allocation for the project includes a modal interchange. The BiciMad rental bike stands will then be moved to Calle del Caballero de Gracia. In Plaza del Callao it is planned to introduce

larger trees and surrounding garden areas to restrict sprawl by the outdoor cafés, which have proliferated in recent years, invading much of the surface area of the square (see previous chapters). The redesign project has a budget of around EUR 9 million

To create a pedestrian "skeleton", this action is to be completed with a North/South-East axis, comprising the actions already carried out in the southern section of **Calle de Fuencarral and Calle de la Montera**, and the actions in **Calle de Carretas and Atocha**.

In the section of Calle Atocha the project involves replacing perpendicular parking with parallel spaces with a permeable surface, widening footpaths, an exclusive unsegregated 2-metre bike lane in the initial section with a sharp upward gradient where the width of the street allows. In addition, a kerbless joint rest area will be created in the area of the Plaza de Antón Martín. A differentiated surface treatment will be applied from the junction with Calle Moratín, from which road traffic will be prevented from turning into Plaza de Antón Martín.

The section between Carretas and Benavente is being completely pedestrianised, with a combined budget for the two areas of EUR 5,635,241.89. In the next legislature, it is planned to reorganise the Plaza de Benavente and connect it to Plaza de Antón Martín. This is a more complex action due to the existence of the underground car park and the public transport hub (the terminus of several bus lines) in the **Plaza de Jacinto Benavente**. The project includes elimination of the access ramps to the underground car park, which is currently at preliminary study phase.

Another action which remains to be implemented to complete this axis in the district is the section of **Calle de Fuencarral** running between Glorieta de Bilbao and Calle de Augusto Figueroa, which has also been slated for the next legislature. This will probably be a mixed intervention, which—between Calle Barceló and Glorieta de Bilbao at least—will not be strictly pedestrian. It will be of particular importance because it could link in with the section already completed outside Distrito Centro between Glorieta de Bilbao and Glorieta de Quevedo and in turn with a potential action extending as far as Cuatro Caminos via Calle de Bravo Murillo, which is very wide in that section. This would create an important pedestrian/cycling axis ("citywide", in the classification set out in the 2012 Pedestrian Strategy) within a relatively short space of time and with an only modest level of investment.

Among the main streets, it is also worth mentioning the action on the **Boulevards**, at the northern end of Distrito Centro, which extends as far as Calle del Marqués de Urquijo. Work on this axis (which takes in Calle de Genoa, Calle de Sagasta, Calle de Carranza, Calle de Alberto Aguilera, and extends along Calle del Marqués de Urquijo) could be classed as a "soft" action. The relative width allotted to vehicular and pedestrian traffic remains unchanged and the main difference involves introducing narrowing traffic lanes to insert unsegregated one-way cycle path alongside the bus lanes. Together with the introduction of cycle lanes on Calle de Santa Engracia and Calle de Toledo, this is one of the most visible actions in terms of cycling mobility in the "central almond", an aspect which the municipal government itself has recognised should have been developed further were it not for budget constraints. Nonetheless, it means picking up the thread of the Master Plan for Cycle Mobility, passed in 2009, which came to a complete halt in the following years, and which should not be abandoned in the future.

Secondary Axes

The hierarchy set out in the Strategy for the Creation of a Network of Pedestrian Trails in the "Central Almond" also established a series of secondary axes for Distrito Centro, for which a variety of actions were planned.

The northernmost of these is the **National Library/Conde Duque Centre axis**, which has already undergone permanent changes in the area around Calle Barceló / Jardines del Arquitecto Ribera. The axis has been extended with low cost semi-pedestrianisation actions along the entire **Calle de la Palma**, and the parallel street to the south, **Calle de San Vicente Ferrer,** which was already kerbless along much of its length, following redevelopment under the A.R.P. Dos de Mayo (actions which had already been trialled on a temporary basis during some Mobility Weeks). Although the strategy does not include Calle de San Vicente Ferrer, we believe that the action on two parallel streets, far from detracting from the goals set out in the document, actually reinforces them (as we shall see, this solution could be replicated elsewhere).

The action on Calle de San Vicente Ferrer, which involves eliminating several parking spaces, is being coordinated with another tactical planning intervention on Calle de Santa Cruz de Marcenado, where the direction of parking spaces is being changed from parallel to perpendicular, giving a net increase in parking spaces between the two operations. The non-central position of Calle de Santa Cruz de Marcenado within Distrito Centro means that there will be less of an impact of traffic in search of parking spaces.

This action on the National Library/Conde Duque Centre axis will be extended with another planned action, which will involve creating a kerbless zone, first on **Calle de Amaniel**, and then throughout much of the Conde Duque neighbourhood, in phases. Redevelopment of Calle de Amaniel and the adjoining area, planned for 2019, will follow the model of actions in the Gracia neighbourhood of Barcelona. It has been decided to opt for a kerbless design, with a tarmacked roadway; the steep gradient made the use of paving stones unsuitable due to issues of future maintenance (as already mentioned, a similar solution had caused problems in some areas of the previous Dos de Mayo ARP). It involves altering the axis of the street at the junction with Calle de Noviciado, where the removal of 4 parking spaces will allow the footpaths to be widened while a bend in the roadway will considerably reduce vehicle speeds. Calle de Amaniel was formerly used by many vehicles as a short-cut between Plaza de España and the Boulevards and as a result, suffered from intense through traffic. However a previous minimum action, involving prohibiting right-hand turns from Calle de los Reyes onto Amaniel reduced the problem. The axis still remains to be linked to the Gran Via, via Plaza de Mostenses.

A little further to the south it is planned to reorganise the cross-section of **Calle del Pez**. Although the Strategy does not envisage any secondary axis in this area, the Gran Via Master Plan did include a connection between the squares to the rear of the Gran Via, mainly comprising Calle de la Luna and Calle de las Infantas. The action on Calle del Pez could serve as part of that axis in the most westerly area, with the advantage that the gradient here is not as steep as in Calle de la Luna, and it could be extended along to Calle de las Infantas, via Calle de la Puebla and Calle de San Onofre. The connection with the Plaza de Mostenses would be via Calle del Álamo, which is the continuation of Calle de Amaniel, on which, as we have seen, another intervention is planned. This would give consistency to the proposal made in the Gran Via Master Plan, the planned actions and the inclusion of the squares to the rear of the Gran Via (Plaza del Rey, Plaza de Vázquez de Mella/Pedro Zerolo) in the Europan competition, also planned, and also link to Plaza de España, via Calle de los Reyes.

Figure 43. Pedestrian space in Calle de Fuencarral - Source: Authors

Actions have also been carried out on another two transverse axes, including what is known the **Letras-La Latina axis**, via Calle Magdalena and Calle del Duque de Alba (the strategy envisaged a similar axis, from Plaza de San Francisco to Plaza de Tirso de Molina). The project, under execution at the time of writing, has a budget of EUR 3,979,393.25 and includes installing street furniture along the entire route, as well as the replacement of perpendicular parking by a parallel strip and/or an area with trees and street furniture.

In the section from Plaza de Puerta de Moros the footpaths are being widened, the existing parking strips are being removed and replaced by rest areas. Similarly, the existing perpendicular parking area in the Plaza de la Cebada at the junction with Calle del Humilladero is being eliminated and the pedestrian area extended, leaving this section free of ground-level parking. In the redevelopment of that section, traffic is being reorganised by removing the traffic island between Calle de la Cava Alta, Plaza del Humilladero and Plaza de la Cebada. In the section corresponding to Calle de San Millán and Calle del Duque de Alba and Calle Magdalena the same criterion is being followed of reducing ground-level parking by replacing perpendicular with parallel parking.

Another more minor transverse axis which has seen intervention is **Calle del Tribulete-Calle Casino**. This is of interest because it acts as a continuation of two other axes, the one already in place along Calle Argumosa and the one which is beginning to be formed along Calle del Doctor Fourquet, along very similar lines to those set out in the Urban Landscape Quality Plan (the "axis of emerging art"); here there has been a spontaneous concentration, with no official incentives, of art-related activities. Also of interest is the action on Calle del Tribulete, where several parking spaces have been removed and large plant troughs installed. This is a low-cost and reversible operation. A very effective, and even more economic, micro-intervention has already been completed in Calle Casino, simply by reorganising the direction of the streets, along similar lines to Calle de los Reyes. Likewise, a solution could be studied which would involve duplicating the axis, with similar actions to those on Calle de Palma/Calle de San Vicente Ferrer on Calle del Sombrerete/Calle de Mira el Sol. This would make it possible to extend the system to Plaza del Campillo Nuevo.

Actions at neighbourhood level

Eleven streets in the environs of Plaza de Chueca have also been redesigned. Large-scale actions such as these at neighbourhood level require a larger outlay (in this case, EUR 4.154 million) and these operations have only been possible due to a certain recovery in investment levels. The streets in question are Calle de Hernán Cortés (already completed and opened in August 2017); Calle de Santa Brígida; Calle Farmacia; Calle de Augusto Figueroa; Calle de San Marcos; Calle de las Infantas; Calle de la Reina; Costanilla de los Capuchinos; Calle de San Bartolomé; Calle de Barbieri and Calle Libertad. The alterations involve removing kerbs, paving the roadway and removing the bollards separating the footpath on at least one side of the street. A strip of drainage paving is being laid with obstacles to prevent parking.

The action in **Zone 30 in Chamberí** in the area of Olavide, adjoining the northern limit of the district, is nearer to being a pilot experience. It combines various "soft" and "hard" techniques, and it is believed it could be replicated in other neighbourhoods in the adjacent district. In both Chueca and Olavide, it is planned to reduce roadside parking places. This has been shown to be one of the most effective—but at the same time most unpopular—measures, and citizen participation is therefore recommended to

Figure 44. Temporary lawn in the Plaza Mayor - Source: Ayuntamiento de Madrid

ensure a certain degree of backing for these initiatives. Nonetheless, it should be remembered that all the comprehensive large-scale redevelopment operations (Refurbishment Areas of Lavapiés, Calle de las Huertas and Pez/Luna) have involved very significant reductions in roadside parking spaces (much greater than those resulting from the actions currently underway), and that only in the case of Lavapiés was this compensated for by creating underground car parks for residents.

Special actions

A number of special operations that impact the public space are currently underway in Distrito Centre or the adjoining area.

Within the District, the agreement on the **Canalejas operation**, inherited from the previous administration, includes intervention on the public space, with changes to the access ramps leading to the underground car park (publicly owned and currently operated under license), which will require making alterations to the vestibule of the Metro station. This enables greater footpath width on both Calle de Sevilla and the final section of Calle Alcalá. Together with the action on the Gran Via, this operation leaves Calle de la Virgen de los Peligros as an undeveloped island standing between the two major interventions, and it should be considered for action in the short-term future.

The other large-scale project of the current administration, **redesign of Plaza de España**, lies just outside Distrito Centro. The bases of this operation, which was also inherited from the previous administration, were redirected with an international competition, won in February 2017 by a team led by Fernando Porras (one of the designers of Madrid-Río). Few details of the development of the project were known until October 2017, when several important aspects were announced: the roadway will be reduced by one lane in each direction on Cuesta de San Vicente and a bicycle lane added (this will limit traffic towards Distrito Centro which by the time the works have been completed will have been declared a Resident Priority Areas in its entirety); and the tunnel from Plaza de Oriente to Ferraz will be extended. This connection is considered viable based on studies which predict a reduction in the intensity of traffic of up to 50% in the Bailén-Ferraz axis with the introduction of Madrid Central. This will allow the creation of a large free space in front of the Senate, linking the Sabatini gardens, the Plaza de Oriente and the Plaza de España.

It is also planned to restrict vehicles from turning onto Cuesta de San Vicente from Calle de la Princesa, requiring them to take Calle de Ventura Rodríguez instead. This will allow redesign of the square to be better fitted in with the other large project currently underway on the Gran Via.

CALLE AMANIEL

GRAN VÍA

CALLES FUENCARRAL, PEREZ GALDÓS, AUGUSTO FIGUEROA, SAN ONOFRE, INFANTAS Y RED DE SAN LUIS

CALLE MONTERA

CALLE ARENAL

CALLE CARRETAS (ACTUACIÓN ATOCHA-CARRETAS)

CARRERA DE SAN FRANCISCO-CALLE MAGDALENA

CARRERA DE SAN FRANCISCO-CALLE MAGDALENA

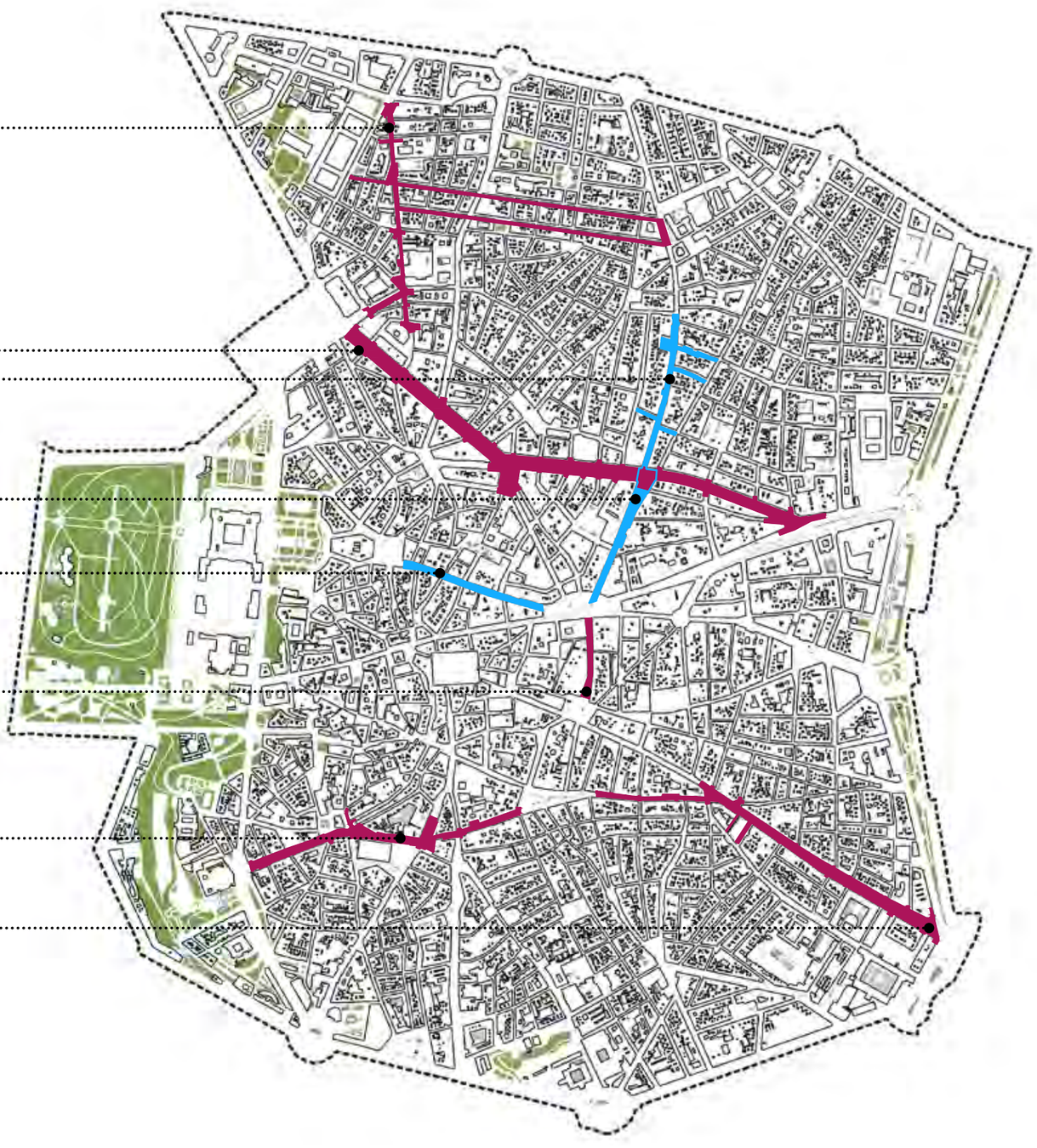



Figure 45. C/. San Vicente Ferrer - Source: somosmalasaña


Figure 46. C/. La Palma - Source: somosmalasaña


Figure 47. C/. Amaniel - Source: somosmalasaña


Figure 48. Gran Vía - Source: Authors

ACTIONS ON AXES

We have included a specific analysis of actions relating to axes/streets, not only because of the physical nature of these interventions (which are generally confined to a single street, and eminently linear in scope), but also because the great majority of planning instruments we have analysed stress the creation of special "itineraries" or trails. The reality is that despite this emphasis, there has been no corresponding prioritisation when it comes to executing the actions contained in the planning documents; since 2005 on, most have simply been carried out as the opportunity arose. For example, the pedestrianisation schemes in **Calle de la Montera and Calle del Arenal** were largely driven by long-term traffic closures made necessary by construction of the suburban rail station at Puerta del Sol.

Much of this infrastructure work has been widely criticised amongst those working in the field for its high cost, its aesthetic impact at ground level, the fact that it was often unnecessary (Puerta del Sol, for example, was already a very accessible area, directly connected to Atocha by Line 1) and above all because it involved overloading a public space which was already on the verge of saturation. In this context, the pedestrianisation of these two streets was practically forced on planners, in order to cope with the new influx of pedestrians which could not be absorbed by the already pedestrianised Calle de Preciados and Calle del Carmen on their own. In addition, because these are important shopping streets, they were used intensely by pedestrians from the moment they were opened. Together with the subsequent pedestrianisation of **Calle de Fuencarral**, this has created a shopping axis which was already discussed in some planning instruments (the ULQP, for example, mention this "thousand-store axis").

The 2018 operation in **Calle de Carretas** to the south complements these actions and is likely to help take pressure off Puerta del Sol. Another operation which might also do the same is the opening of a new suburban rail entrance at Red de San Luis and the direct connection to the Metro station on Line 5 and Line 1 (currently being built, under the aegis of the regional government of Madrid). The axis has no reserved space for bicycles and the intensity of pedestrian traffic has almost become a barrier for cyclists and also for pedestrian traffic crossing the route.

At Plaza de Jacinto Benavente, the Calle de Carretas scheme meets the specialist tourist axis of Prado-Palacio. The action in **Calle de las Huertas** is interesting in that it combines the action in the axis with a broader conception of the neighbourhood integrated in the Refurbishment Area.

Nonetheless, the actions currently being executed are of greater interest, in creating itineraries that are not designed for shoppers or tourists, but for local walkers getting about on their everyday business. The actions on the **San Francisco-Magdalena axis** (which extends along Calle de Moratín through the work already completed as part of the ACR of the Las Letras neighbourhood as far as Paseo del Prado), have created a very interesting alternative east-west route that does not pass through Puerta del Sol. The scheme does not include exclusively pedestrian sections, but mainly involves widening footpaths and creating small parklets, like those successfully trialled in Calle de las Huertas.

Another interesting aspect of the Calle de las Huertas operation is the way in which the linearity of the street/axis has been reconciled with a more spreading neighbourhood-based design. This approach has been successfully repeated in the **Calle de Amaniel** design, which like the San Francisco-Antón Martín axis, is beginning to become an alternative route to Puerta del Sol. Again, in this case, the route also allows road traffic.

Actions on other transverse streets are also important for their pioneering nature: the section of the National Library-Conde Duque Centre axis along **Calle de San Vicente Ferrer and Calle de la Palma**, and the section on **Calle del Tribulete**. These were the first trials of inexpensive "soft" solutions, employing what has been called "tactical planning". With a minimum level of intervention (street markings, the removal of bollards, installation of flower pots, removal of parking spaces, installation of street furniture), similar goals can be achieved as in much larger and more expensive operations.


Figure 49. Carrera de San Francisco - Source: Authors


Figure 50. C/. Magdalena - Source: Authors


Figure 51. C/. Carretas - Source: Authors


Figure 52. C/. Atocha - Source: Authors

CALLE ARENAL

CAP: 8 | AP: 1

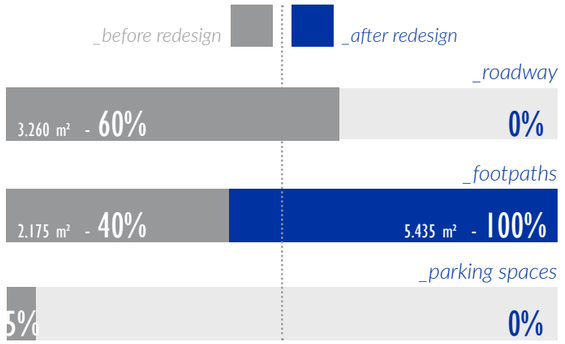
_total land area: **5435 m²**

_axis: **calle Arenal**

_date: **Sep-Dec 2006 (Phase 1), Mar-May 2007 (Phase 2)**

_budget: **1.900. 000 €**

_agent: **Ministerio de Fomento**



30 LOTS APROX

Transformation of the Calle del Arenal was completed in three phases. The first involved the section between Puerta del Sol and Calle de las Hileras. Completed in December 2006, it cost EUR 1.3 million and affected a total area of 3,900 square metres. The featureless 3-colour stone paving used throughout the section was widely criticised and has not lasted well. It was initially designed to be a "shared" space, with entry allowed to vehicles accessing the Descalzas and El Corte Inglés car parks.

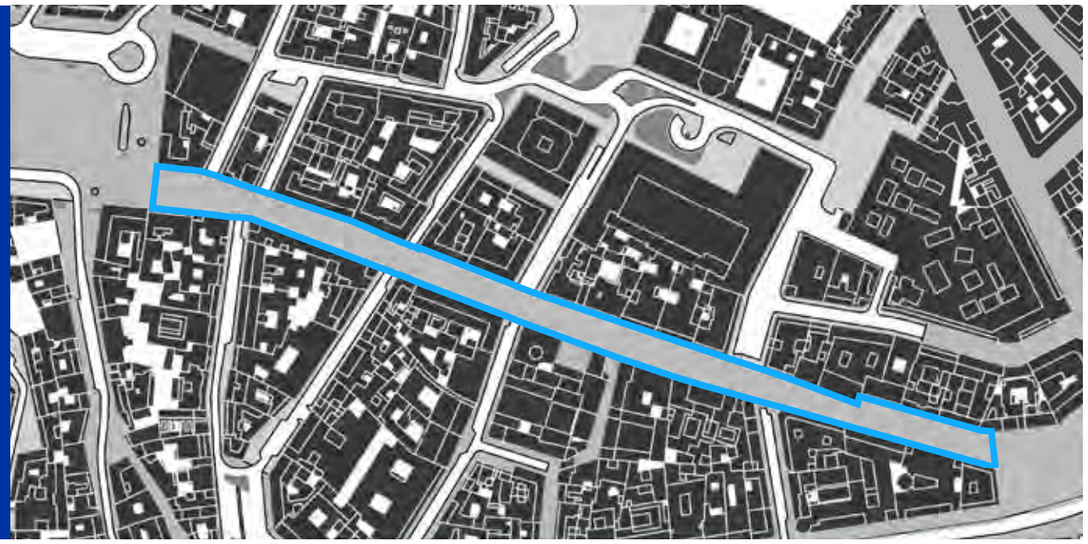
The second phase of pedestrianisation of Calle del Arenal took place between February and April 2007, extending the area of action from Calle Hileras to the Plaza de Isabel II¡, which was in turn partially pedestrianised in 2009, when vehicles were prevented from turning from Calle Arrieta onto Calle Vergara. With the completion of this final section and finally the declaration of the Opera RPA in 2016, the shared sections were restricted to the junctions on Calle del Arenal where vehicles accessing the car parks were allowed.

Figure 54. Calle del Arenal following redesign - Source: Authors

Figure 53. Calle del Arenal following redesign - Source: Authors

BEFORE REDESIGN

AFTER REDESIGN



BEFORE REDESIGN

Figure 55. Calle del Arenal c. 1914 - Source: Museo de Historia de Madrid

Figure 56. Calle del Arenal prior to redesign - Source: El Mundo. Photograph by Fernando Quintela

AFTER REDESIGN

Figure 57. Calle del Arenal following redesign - Source: Authors

CALLE FUENCARRAL

CAP: 8 | AP: 2

_total land area: **10.500 m²**

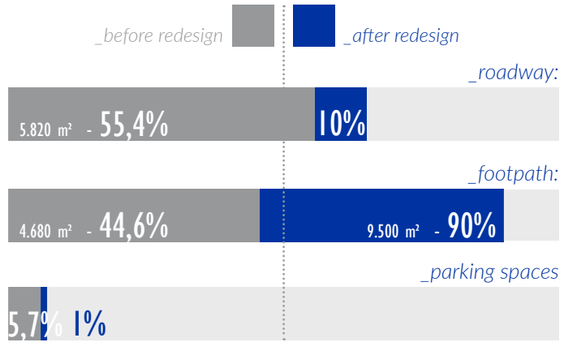
_axis : **Calle Fuencarral, Pérez Galdós, Augusto Figueroa, San Onofre, Infantas and Red de San Luis**

_date: April - August **2009**

_budget: **2.700.000 €**

_agent: **EMVS**

Figure 59. Calle de Fuencarral following redesign - Source: Authors

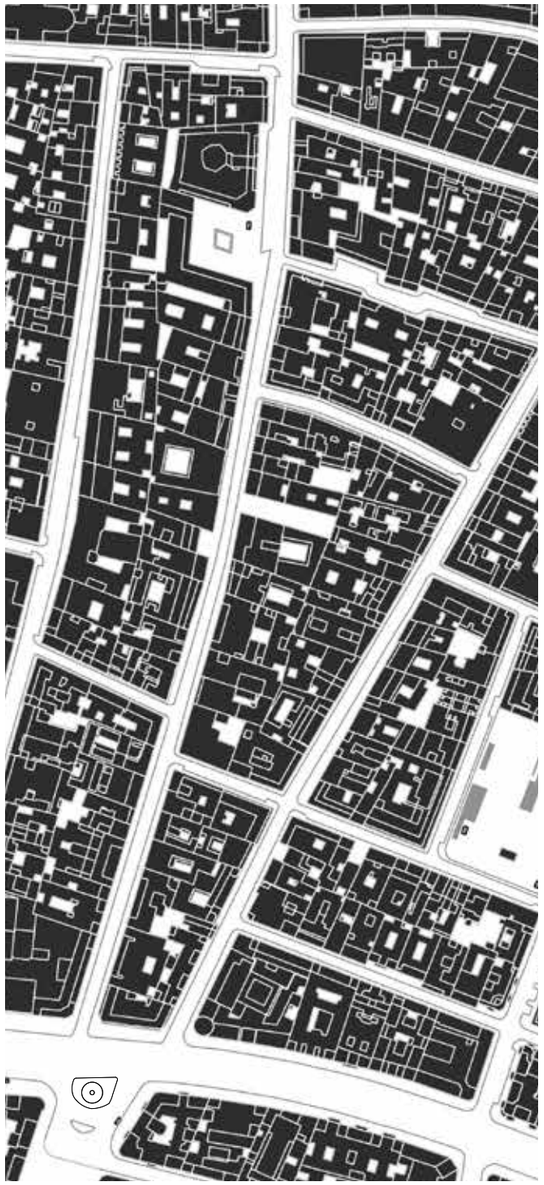


Calle de Fuencarral explicitly extends the axis initially created with the pedestrianisation of Calle de la Montera. Indeed, the project includes the end of the Red de San Luis from Calle del Caballero de Gracia which was not included in work on Calle de la Montera. This has generated a large pedestrian transit area with an average daily footfall of 36,000 people. It is especially associated with the shops that have proliferated in the area, with the influx of major brands and franchises, mainly connected to the fashion industry.

The area has been made kerbless, although the paving on the central strip and the old footpaths is visibly distinguishable. Significant quantities of vegetation have been included, but the same is not true of street furniture: 10 years on from the operation, there are scarcely any benches left and pedestrians resort to sitting on the raised basin around the olive trees in the small square at the junction with Calle de Hernán Cortés, the northernmost limit of the action, which also includes the neighbouring streets of Calle de Pérez Galdós, Calle de Augusto Figueroa, Calle de San Onofre and Calle de las Infantas between Calle de Fuencarral itself and Calle de la Hortaleza.

An intervention was recently announced for the remaining section of street within Distrito Centro, between Calle de Hernán Cortés and Glorieta de Bilbao. This will probably not involve pure pedestrianisation, at least between Calle Barceló and Glorieta de Bilbao, but at least one traffic lane will be retained. This intervention will also connect with to the section that lies outside the district, between Glorieta de Bilbao and Glorieta de Quevedo. This section, which was recently the subject of another intervention, includes an important pedestrian zone and is completely closed to traffic on Sundays.

Figure 58. Calle de Fuencarral; following redesign - Source: Authors



BEFORE REDESIGN

AFTER REDESIGN

N 0 10 50 metros

ÁMBITO DE ACTUACIÓN

BEFORE REDESIGN

AFTER REDESIGN

Figure 60. Calle de Fuencarral prior to redesign - Source: El Mundo. Photograph by Antonio Heredia

Figure 61. Calle de Fuencarral following redesign - Source: Authors

Figure 62. Shops on Calle de Fuencarral - Source: Authors

CALLE MONTERA

CAP: 8 | AP: 3

Figure 64. Calle de la Montera following redesign - Source: Authors

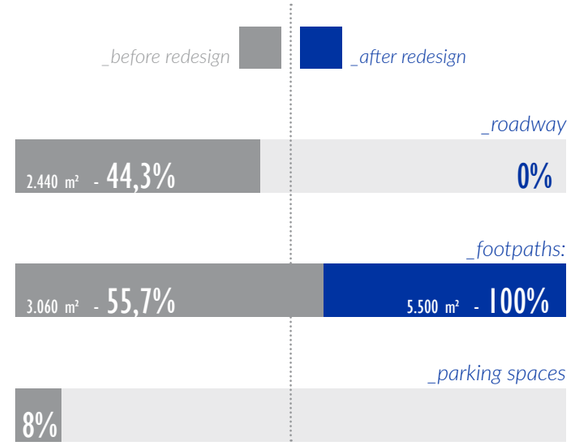
_total land area: **5.500 m²**

_axis: **calle Montera**

_date: Jun. and Dec. **2006,** Jul-Nov. **2008**

_budget: **466.000 € (Phase 1), 1,5M € (Phase 2)**

_agent: **Ministerio de Fomento**

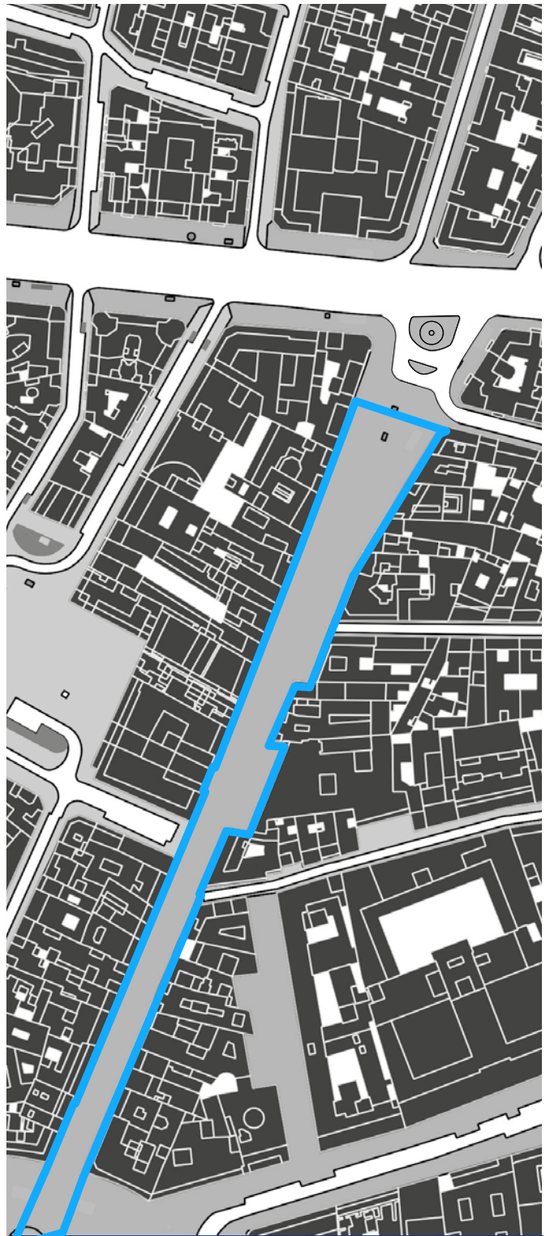


30 LOTS APROX

This operation was carried out practically simultaneously with the action on Calle del Arenal. The first phase—as far as Calle de la Aduana—was completed in 2006 and the second—to Calle del Caballero de Gracia—in 2008. This operation also involved a strongly pro-pedestrian approach; traffic is only allowed to enter the street from Calle de la Aduana to get to the car park at Plaza del Carmen, and access is made extremely difficult by to the intensity of pedestrian traffic. Like Calle del Arenal, the road is kerbless, paved with diagonally-arranged paving stones (apparently more resistant), although the larger number existing trees means that the central strip of the former roadway still looks like a traffic axis, with the numerous indents in the alignment of the eastern frontage of the street acting as stopping areas. The later action on Calle de Fuencarral, which included the end of Calle de la Montera from Calle del Caballero de Gracia to Red de San Luis, created a north–south pedestrian axis that was to be strengthened by the remodelling of the Gran Via.

Figure 63. Calle de la Montera from Gran Via following redesign - Source: Authors

BEFORE REDESIGN



AFTER REDESIGN

N 0 10 50 metros

ÁMBITO DE ACTUACIÓN

BEFORE REDESIGN

AFTER REDESIGN

Figure 65. Calle de la Montera c. 1921 - Source: Museo de Historia de Madrid

Figure 66. Calle de la Montera before redesign - Source: El País

Figure 67. Calle de la Montera following redesign - Photograph by authors

Figure 68. Gran Via from Plaza del Callao - Source: Ayuntamiento de Madrid

GRAN VÍA

Figure 69. Gran Via before remodelling - Source: Authors

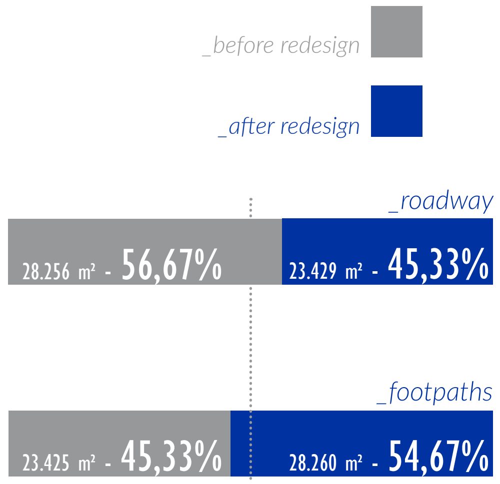
_total land area: **51.690 m²**

_axis: **calle Gran Vía**

_start date: **summer 2018**

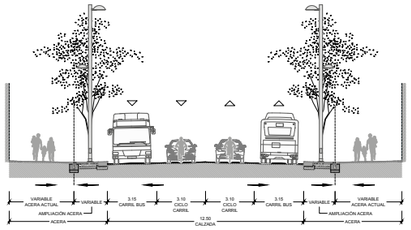
_budget: **9M € aprox**

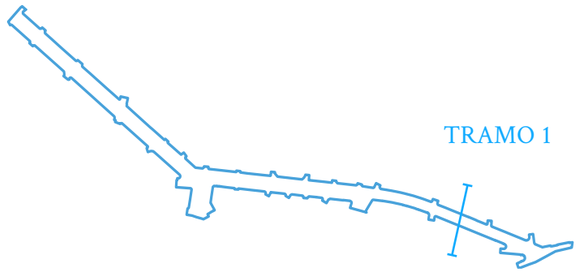
_agent: **D.G. for Public Space, AGDUS**



The Gran Via intervention, which is unquestionably the most important in the district for decades in both quantitative and qualitative terms, has been described in broad terms above. It is intrinsically linked to the Madrid Central scheme, inaugurated in November 2108, which restricts access by non-resident traffic to the entire Distrito Centro (a move which has to a great extent been made possible by advances in access control technologies). It has been calculated that this traffic restriction scheme will reduce the number of motor vehicles on the avenue by at least 40%. This action should also be viewed within the wider overall framework of the Plan A (Air Quality), which seeks to reduce pollution levels in the city. As a result of this plan, under this administration temporary traffic constraints have been implemented for the first time to address spikes in pollution, as per the protocol approved by the previous government.

The transformation involves restricting traffic to one lane in each direction, with one lane for public transport and another for bicycles and authorised vehicles (loading and unloading, residents, taxis, etc). Nonetheless, there are three separate parts to the scheme, coinciding with the historical sections of the street.





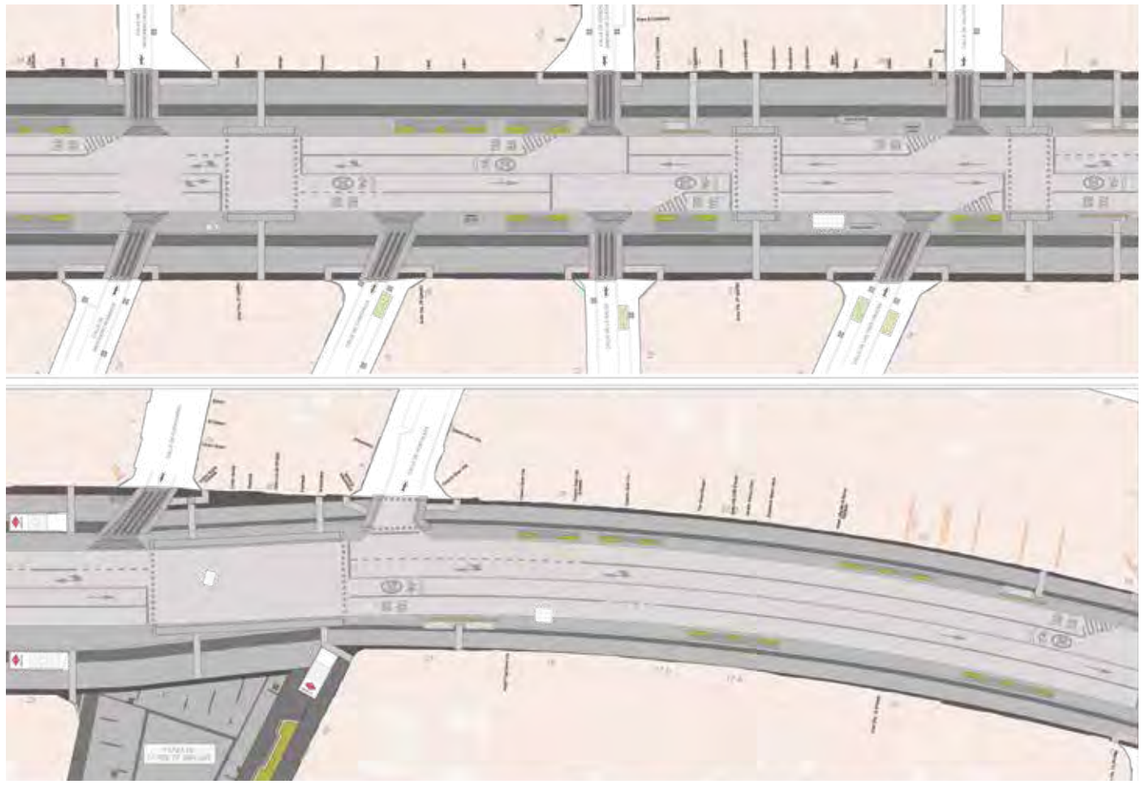


Figure 70. Standard plan and cross-section of the remodelling project; Section 1: Red de San Luis to Calle de Alcalá - Source: Ayuntamiento de Madrid

The oldest area of the Gran Via, between Puerta de Alcalá and Red de San Luis is narrower than the other two sections (25 metres as opposed to 35). As a result, each footpath is less than three metres wide. However, this is considered sufficient since given that this section of the avenue does not have as high a concentration of retail outlets as the rest. However, two large rest/recreation areas have been created: the first is in front of the iconic Metrópolis building, at the junction with Calle de Alcalá, considerably improving conditions for crossing this major artery (previously there was a narrow traffic island on a bend), and the second further up at the junction of Calle del Caballero de Gracia, which now meets the Gran Vía almost at right angles, leaving a wide triangular area. Pedestrian permeability has also been considerably improved. A new traffic light has been installed at the junction with Calle de Victor Hugo (previously, the distance between pedestrian crossings was clearly excessive). In this gently-sloping section, the central lanes are unsegregated bicycle-priority lanes.

The second section, between Red de San Luis and Plaza del Callao, is practically level and the previous lane division has been maintained unchanged. Nonetheless, the greater total width allows for some widening of the main footpath,

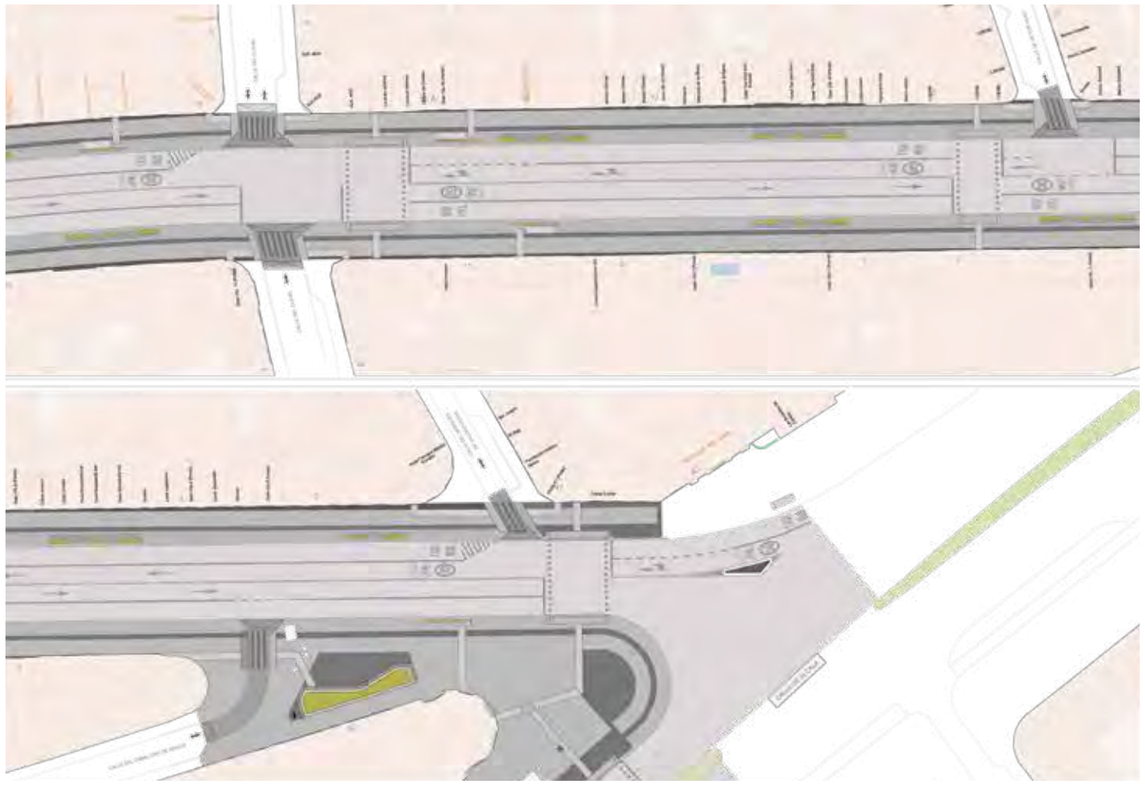


Figure 71. Gran Via between 1922 and 1936 (Avenida del Conde de Peñalver) - Source: Museo de Historia de Madrid

Figure 72. Road traffic on Gran Via - Source: Authors

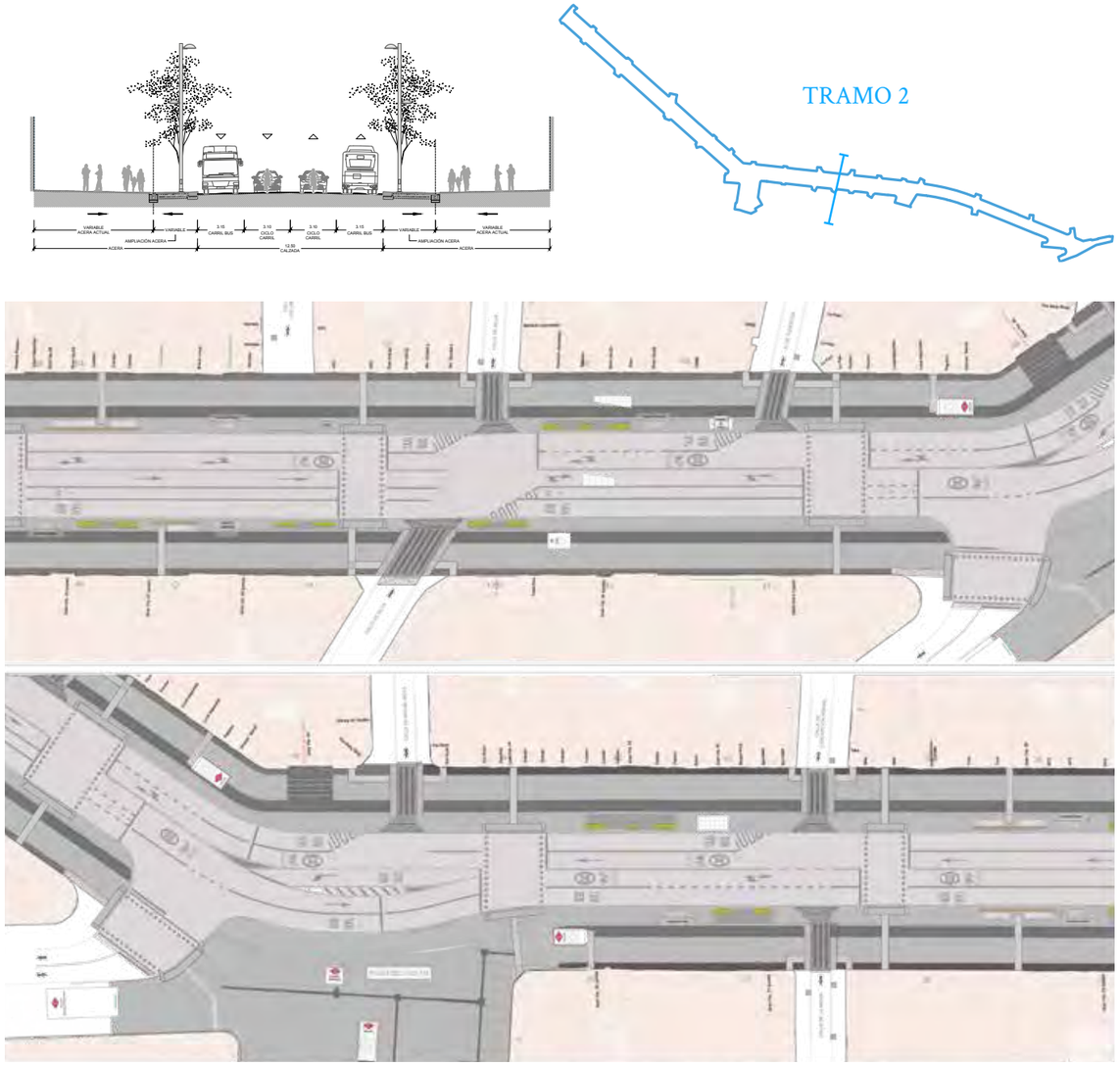


Figure 73. Standard plan and cross-section of the remodelling project. Section 2: Calle de Silva, Plaza del Callao, and Calle de la Abada - Source: Ayuntamiento de Madrid

enabling "parklets" to be created where there is a concentration of street furniture. At either end of this section, two recently developed areas—where the Gran Via meets Plaza del Callao and Calle de la Montera respectively—have been slightly altered to minimise the excessively hard results, especially at Callao. In the first case, the design has sought to "reclassify" the space using street furniture and vegetation. In the second, the BiciMad rental bike stands have been moved to allow a new entrance to the Puerta del Sol suburban rail station. Another two traffic lights have been added on this section, one of which extends pedestrian traffic between Calle de la Concepción Jerónima and Calle de la Abada, in addition to the existing high-width pedestrian crossing at Red de San Luis. The large number of traffic lights and zebra crossings will also help reduce the load capacity of the roadway.

Finally, there is an important change to the final section, running to Plaza de España. In the upward direction, where the gradient exceeds 4%, a segregated (though not physically separate) bicycle lane has been introduced. The rationale is that cyclists are more affected by the steep incline and their reduced speed makes them more vulnerable to traffic. In

Figure 74. Gran Via (Avenida de José Antonio) between 1960 and 1965 - Source: Museo de Historia de Madrid

Figure 75. Gran Via and Plaza del Callao - Source: Authors

Figure 76. Gran Via (Avenida de Pi y Margall from Plaza del Callao) between 1925 and 1936 - Source: Museo de Historia de Madrid

Figure 77. Gran Via from Plaza del Callao prior to the 2018 remodelling - Source: Photographs by authors

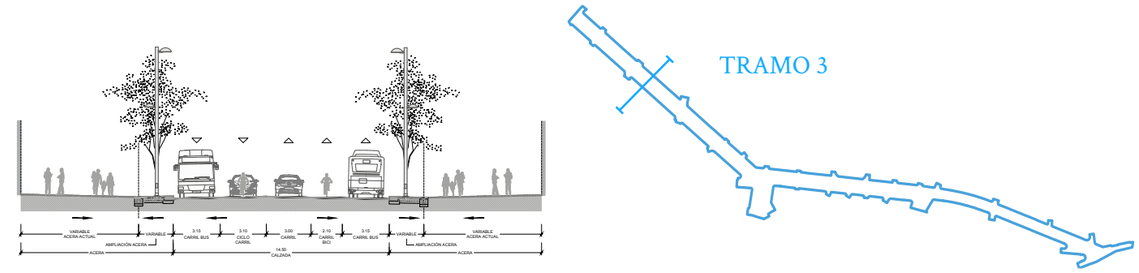


Figure 78. Standard plan and cross-section of the remodelling project. Section 3: Plaza de España - Calle de San Bernardo. - Source: Ayuntamiento de Madrid

the downward direction the arrangement is the same as that used on the other sections. Once again, three new zebra crossings have been added. Of these, the most interesting is the one at Calle de Silva, and the crossing at the junction with Plaza de España has been modified to make it more direct for pedestrians. The final layout of this junction will be established in the design for the square, which is still being drawn up. Altogether, there is a very considerable improvement in pedestrian permeability and—to a lesser extent—cycling mobility. One aspect that has been criticised has been the excessive uniformity of the materials used, with widespread application of granite (granite finishes accounted for nearly EUR 1 million out of a total cost for the work of EUR 9 million). Other lower-cost materials might have been used, as in the case of the Plaza de Santa Barbara. However, the principal virtue of the project is its symbolic effect on the city as a whole, alongside Madrid Central, in announcing a new model of mobility, which is still under development.

Figure 79. Gran Via between 1950 and 1960 (Avenida de José Antonio) -Source: Museo de Historia de Madrid

Figure 80. New footpaths on the Gran Via - Source: Ayuntamiento de Madrid

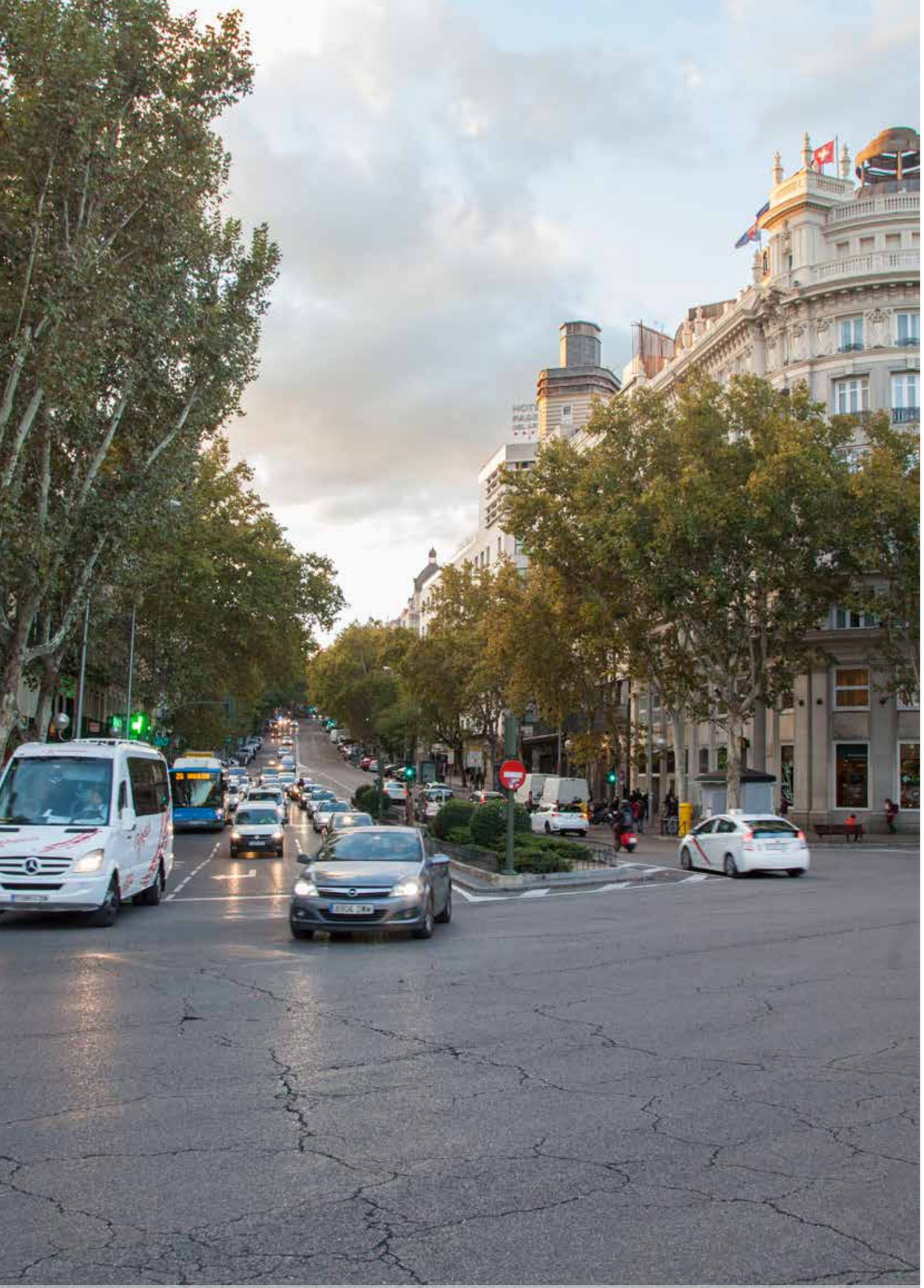


Figure 81. Calle de Atocha - Source: Authors

CALLE ATOCHA Y CALLE CARRETAS

CAP: 8 | AP: 5

Figure 82. Calle de Carretas from Puerta del Sol - Source: Authors

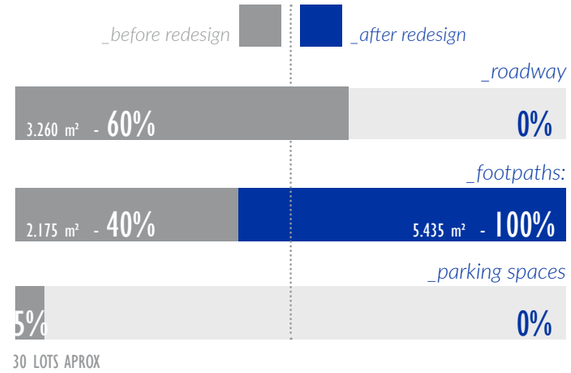
_total area surface: ***20.530 m²(section c/Atocha -plaza de Antón Martín)***
2.960 m² (section c/Carretas)

_axis: ***calle Atocha y calle Carretas***

_date: ***fall 2018***

_budget: ***7M € aprox***

_agent: ***D.G. for Public Space, AGDUS***



30 LOTS APROX

The project involves a more popular continuation of the Calle de la Montera-Calle de Fuencarral shopping axis to the south, which will help relieve pressure on this space and on Puerta del Sol. The section between Carretas and Benavente is being completely pedestrianised, with a combined budget for the two areas of EUR 5,635,241.89.

In the section from Calle Atocha, where there are fewer retail outlets, it is proposed to replace perpendicular with parallel parking with a permeable surface; to widen footpaths; and to introduce a 2-metre bike-only lane, wherever possible with no physical separation, in the initial section, which has a sharp upward incline. In addition, a kerbless joint rest area will be created in the area of the Plaza de Antón Martín (previously redesigned in 2006). A differentiated surface treatment will be applied from the junction with Calle Moratín, from which road traffic will be prevented from turning onto the street.

During the next legislature, it is planned to reorganise Plaza de Benavente and its connection with Plaza de Antón Martín. This operation will be more complex, due to the existence of an underground car park and will involve relocating the access ramps to adjoining streets.

Figure 83. Plan of the remodelling project from Calle de Atocha. Sections 1, 2, 3 and 4 - Source: Ayuntamiento de Madrid

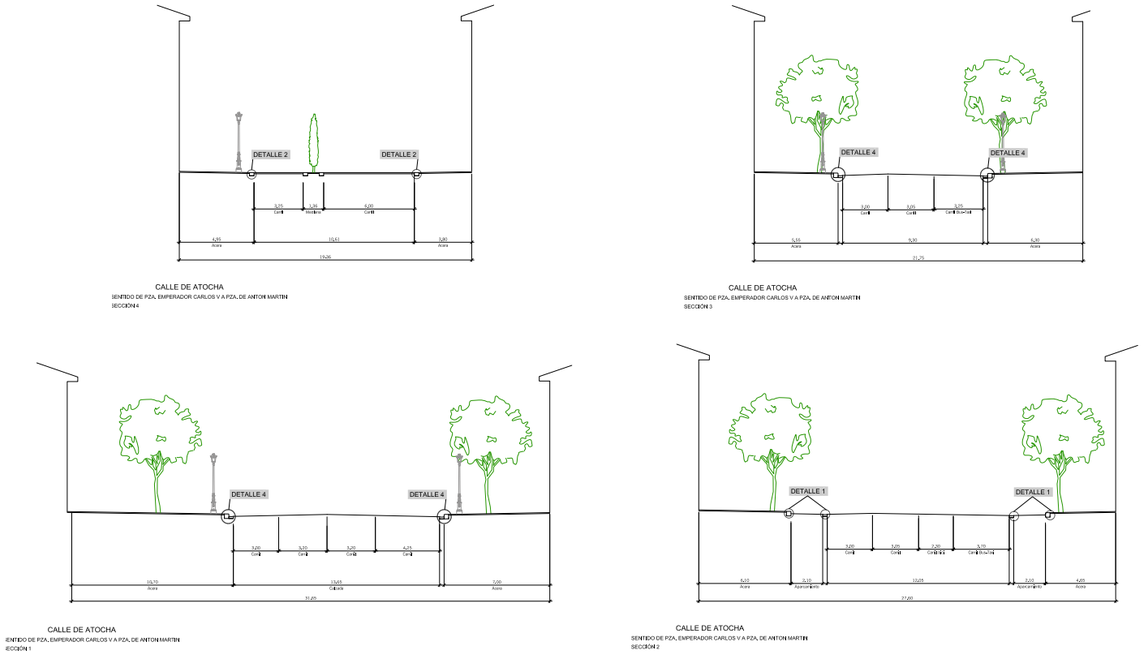


Figure 84. Standard cross-sections for Calle de Atocha. Sections 1,2,3 and 4 - Source: Ayuntamiento de Madrid

Figure 85. Calle de Atocha - Source: El País

Figure 86. Plan of the remodelling project from Calle de Carretas. Sections 1 and 2 - Source: Ayuntamiento de Madrid

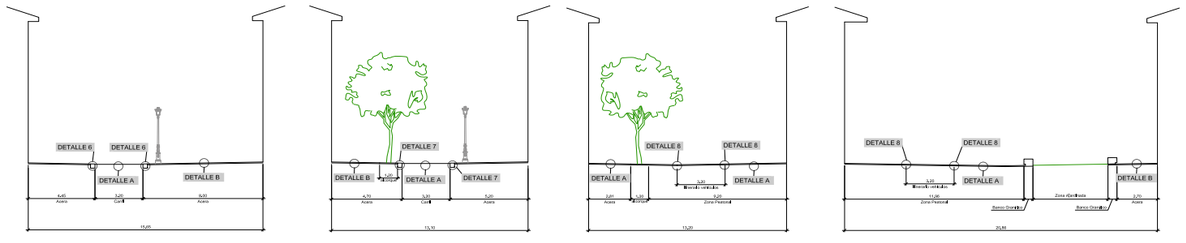


Figure 87. Standard cross-sections of Calle de Carretas - Source: Ayuntamiento de Madrid

Figure 88. Calle de Atocha between 1920 and 1925 - Source: Museo de Historia de Madrid

Figure 89. Calle de Carretas between 1925 and 1930 - Source: Museo de Historia de Madrid

Figure 90. Calle de Atocha and Hotel Nacional - Source: Authors

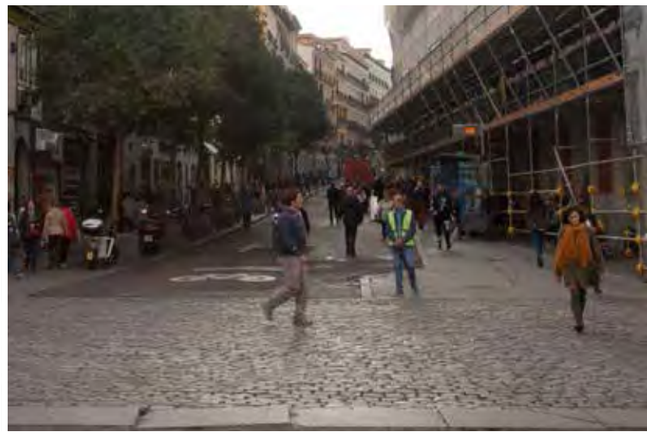


Figure 91. Calle de Carretas - Source: Authors

PLAZA DE SANTA BÁRBARA

PLAZA VÁZQUEZ DE MELLA

PLAZA DEL CALLAO

PUERTA DEL SOL

PLAZA DE TIRSO DE MOLINA

PLAZA DE ANTÓN MARTÍN

Figure 92. Puerta del Sol - Source: Authors

Figure 93. Plaza de Soledad Torres Acosta - Source: Authors

Figure 94. Plaza de Pedro Zerolo - Source: El diario.es

ACTIONS ON SQUARES

Most of the actions conducted during the first stage, at the beginning of the 1980s, were in squares, especially smaller ones. Plaza de las Comendadoras, Plaza de los Guardias de Corps, Plaza de la Encarnación, Plaza de Ramales, Plaza de Santiago, etc. all underwent alterations during this period, generally to reclaim space for pedestrians that had been given over to motor traffic in previous years. This goal was mainly achieved by removing perimeter traffic and parking zones. These redevelopments did not involve any major material alterations, and significant areas of unpaved land and vegetation were maintained.

However, in subsequent years, interventions in squares partially made way for more comprehensive redevelopments, which often included a square but less prominently than was to be the case with the first redesign of **Puerta del Sol** or other subsequent isolated actions. So, for example, the Dos de Mayo ACI affected the eponymous square, removing traffic on three sides of the perimeter of the square and the adjoining street sections, with a very austere design that made the most of the arch from the former Monteleón Barracks; in Lavapiés, the project also affected Plaza de Lavapiés, Plaza de Cabestreros (conditioned by the resident's car park built under the square) and Plaza de la Corrala, with a different approach only in Plaza de Agustín Lara, which was linked more to the construction of the Open University (UNED) building designed by the same architect, J. I. Linazasoro; and in Huertas, Plaza de Santa Ana had been transformed immediately before by the EMV, which did away with the roadway on the northern side, while the small Plaza de la Platería de Martínez took on a significant role. The most significant exception, which did not form part of any of the Refurbishment Areas from this period was the 1997 **Plaza de Vázquez de Mella** development, which was funded by the EU's URBAN programme. In this case the action on the square preceded a subsequent Integrated Refurbishment Zone (IRZ), managed in this case by the regional government. Planning for the project was included in the General Plan by way of the Specific Planning Area APE.01.04, which established the resolutions on basic and detailed planning, and management was allocated to subsequent development, also under the aegis of the Community of Madrid, through the signing of an agreement. The later Refurbishment Area—the Pez/Luna ARHC—broke with this trend. The main free space in the area, the **Plaza de Soledad Torres Acosta or "Plaza de la Luna"**, was designed and executed in complete isolation from action on the other streets; whereas the first was carried out by the Environment Area, the second was undertaken by the EMVS. The rationale for this division of tasks was the "urgency" of the intervention in the square, which was used as a vehicle for getting rid of "unwanted" activities: kerbside prostitution, drug trafficking, etc. Unlike the other streets, an extremely "hard" design was used for the square with a disproportionately large presence of granite surfaces (albeit with a two-tone rhomboid cut). At the same time, a local police station was moved to the square and CCTV cameras installed in the area to create a "riot-proofed" environment.

This action marked the beginning of a trend towards extremely hard squares (much harder than those created the previous decade during the pre-Olympic transformation of Barcelona) which continued in the immediately following years with the redesign of **Plaza del Callao and Puerta del Sol**. The uninterrupted granite tabula rasa used in the paving, the minimal inclusion of plants and street furniture, made the squares unwelcoming; instead they were almost exclusively used as indeterminate venues for occasional commercial activities. Despite the significant cost involved in these two interventions, the current municipal government has decided to intervene again on these two central spaces, albeit with smaller budgets. In Plaza del Callao, the northern part of the square is being altered to match the redesign of the Gran Via; in the case of Puerta del Sol, a number of specific studies have been conducted to assess alternatives, beyond the new comprehensive redesign proposed in the "Piensa Sol" competition organised by the Official College of Architects. In contrast, other squares designed in this final period such as **Plaza de Santa Barbara** (2009) and **Plaza de Tirso de Molina** (2006) are more people-friendly, with alternating materials and colours and the installation of play parks, street furniture, etc.

Figure 95. Plaza del Callao - Source: Authors

Figure 96. Plaza de Tirso de Molina - Source: Authors

Figure 97. Plaza de Santa Bárbara - Source: Nieto-Sobejano arquitectos

Figure 98. Plaza de Pedro Zerolo at present - Source: Authors

Figure 99. Plaza de Pedro Zerolo (formerly Plaza de Vázquez de Mella) following redesign - Source: Ayuntamiento de Madrid

Figure 100. Plaza de Pedro Zerolo (formerly Plaza de Vázquez de Mella) following redesign - Source: Ayuntamiento de Madrid

PLAZA DE PEDRO ZEROLO

Antes Vázquez de Mella

The action in 1997 on Plaza de Vázquez de Mella, now Plaza de Pedro Zerolo, was managed by the Community of Madrid under an agreement in which the City Council transferred its competences in this area. It was financed by an URBAN programme, and later completed as part of an Integrated Refurbishment Zone (IRZ). Redesign affected an existing underground car park, one of the oldest in the city (1949), on the old Plaza de Bilbao, which from the nineteenth century occupied the site of the former monastery of the Capuchin Friars, destroyed during the Civil War. An even larger car park was created, and changes in level in the roof of the car park, parking zones on perimeter streets and traffic on the northern side of the square were all eliminated, completed with part of the adjoining streets. In this case, however, more parking spaces were created underground than were removed at ground level. The rest of the neighbourhood has only now been remodelled, with the 11 streets of Chueca redevelopment, which is currently being implemented.

_total land area: ***5.800 m²***

_square: ***Vázquez de Mella***

_start date: ***january 1998***

_budget: ***2.596 M pesetas***

_agent: ***Comunidad de Madrid***

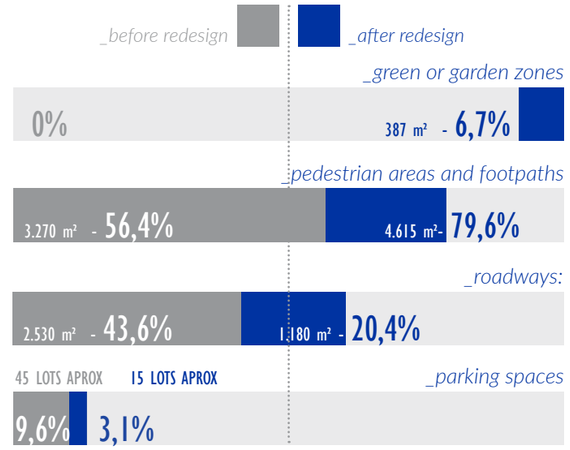


Figure 101. Plaza de Pedro Zerolo (formerly Plaza de Vázquez de Mella) following redesign - Source: El diario.es

Figure 102. Plaza de Antón Martín following first redesign - Source: EMVS

Figure 103. Plaza de Antón Martín following redesign - Source: Authors

Figure 104. Plaza de Antón Martín following redesign - Source: Authors

Figure 105. Aerial views of Plaza de Antón Martín - Source: Instituto Geográfico Nacional

PLAZA DE ANTÓN MARTÍN

A competition for redesign of the Plaza de Antón Martín was organised jointly by the EMVS and the College of Architects Foundation. The winning design was submitted by a team consisting of J.J. Bataller and J. Tejera, who later went on to win the competition for development of the Pez/Luna ARHC. The proposal includes creation of new spaces for pedestrians, following the elimination of the left-hand turn from Calle Magdalena onto Calle de Atocha, and the closing of a Metro entrance. As a symbolic feature, a statue commemorating the Atocha Lawyers, murdered in 1977, was erected in this recreational area. The project was to include a second phase between 2008 and 2010 involving enlarging footpaths in Calle de Atocha as far as Plaza de Jacinto Benavente, including Calle de la Concepción Jerónima and Calle del Conde de Romanones (6,919 square metres). This action will be partially modified by the works scheduled for 2018 for the whole of the Atocha-Plaza de Benavente-Calle de Carretas axis.

_total land area: ***1.570 m²***
_square: ***Plaza de Antón Martín***
_start date: ***2002***
_budget: ***439.878 €***
_agent: ***EMVS***

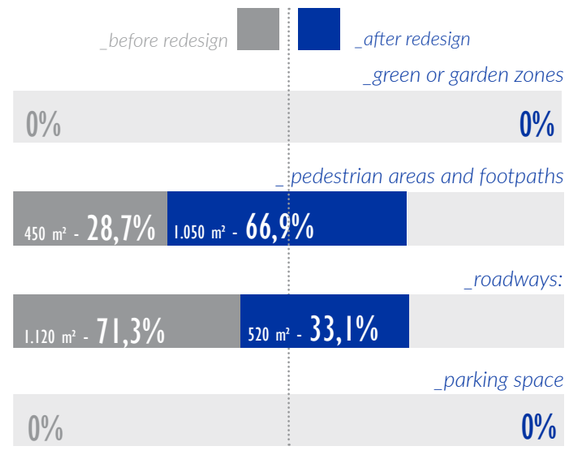


Figure 106. Plaza de Antón Martín following redesign - Source: Authors

Figure 107. Plaza de Tirso de Molina c. 1925 - Source: Museo de Historia de Madrid

Figure 108. Plaza de Tirso de Molina following redesign - Source: Authors

Figure 109. Plaza de Tirso de Molina following redesign - Source: Authors

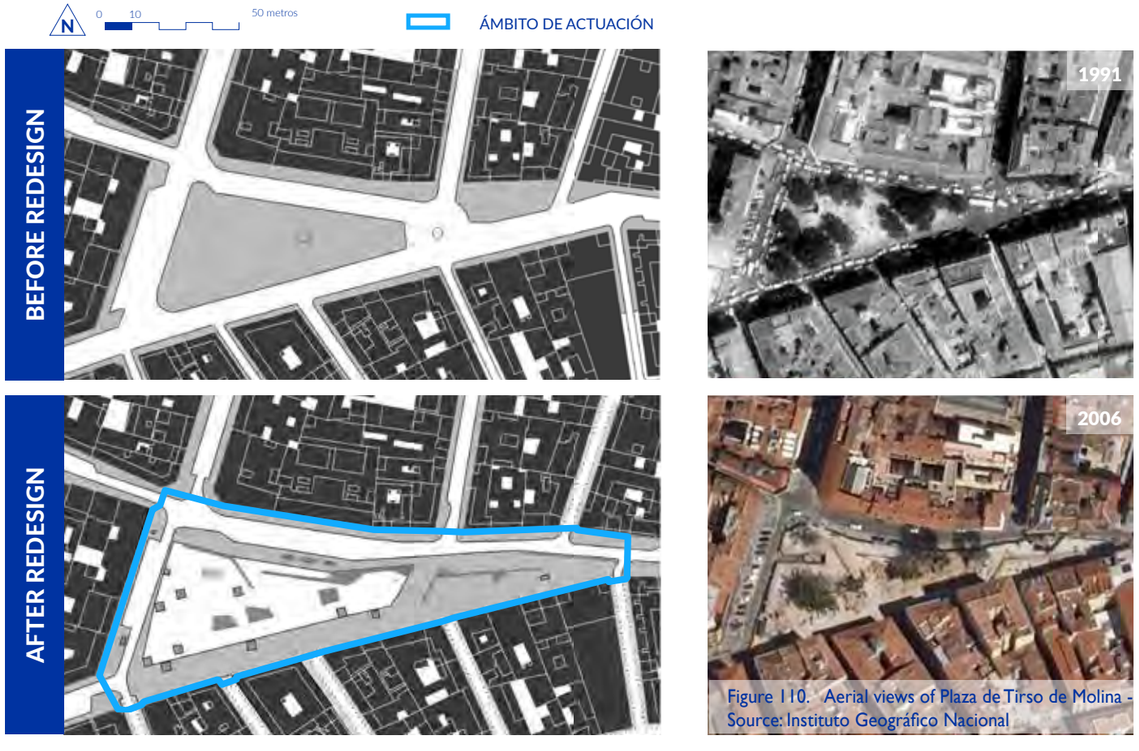


Figure 110. Aerial views of Plaza de Tirso de Molina - Source: Instituto Geográfico Nacional

PLAZA DE TIRSO DE MOLINA

The 2006 intervention on Plaza de Tirso de Molina, the real northern border of the Lavapiés district, has been well received, due to problems in the area, mainly related to drug peddling. Nonetheless, unlike the simplified solutions used elsewhere based on principles such as Oscar Newman's "defensible space" (for example, Plaza de Soledad Torres Acosta), the intervention in Tirso de Molina is quite refined. Road traffic has been restricted to the northern and western sides of the square, leaving a large recreational area to the south. This is divided up between a variety of differentiated spaces, all on the same level from the area of the flower stalls (made to a contemporary design prototype by GalanLubascher) to the area in front of the Nuevo Apolo theatre. A low broken retaining wall with plants separates the upper level from Calle Magdalena. It was intended to create a permanent flower market in the square, with 14 stalls at first and plans to increase the number to 20. In the end, only 8 were erected and these proved unsuccessful and were eventually vandalised.

_total land area: ***8.400 m²(plaza Tirso Molina)***

_square: ***Tirso de Molina and Espada, Jesús y María, S. Pedro Mártir, Juanelo, Soler and de la Cabeza streets***

_start date: ***2005***

_budget: ***2.3 M €***

_agent: ***EMVS***

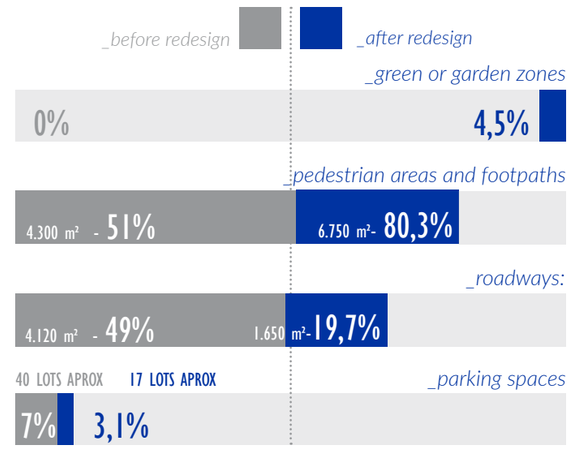


Figure 111. Plaza de Tirso de Molina following redesign - Source: Authors

Figure 112. Plaza de Santa Barbara - Source: Nieto Sobejano arquitectos

Figure 113. Plaza de Santa Barbara following redesign - Source: Authors

Figure 114. Plaza de Santa Barbara following redesign - Source: Authors

Figure 115. Aerial views of Plaza de Santa Barbara - Source: Instituto Geográfico Nacional

PLAZA DE SANTA BÁRBARA

Redesign of the boulevard square of Santa Barbara began with a specific change to the 2005 General Plan, amending APE 01.03, which included redesign of the Barceló Market. The architects, Nieto and Sobejano, were also responsible for designing the new green zone, which sought to recover an open area originally created just inside one of the main gates in the wall constructed by Philip IV, as shown in the famous map by Teixeira. The operation re-established the two lanes of traffic towards Alonso Martínez on the eastern side, and pedestrianised two sections of San Mateo and Orellana. The action covered a total area of 10,800 square metres, of which 3,000 square metres was turned into a rest and recreational area and extensively planted (81 new trees were added, and the existing ones retained in raised metal basins). The work took eight months to complete and cost EUR 3.8 million, funded by the State Local Investment Fund (FEIL).

_total land area: **10.800 m² (plz. S. Bárbara 9.200 m²)**

_square: **Plaza de Santa Bárbara (between Alonso Martínez. and c/Mejía Lequerica)and calle San Mateo and**

_start date: **may 2009**

_budget: **3.8 M €**

_agent: **emvs**

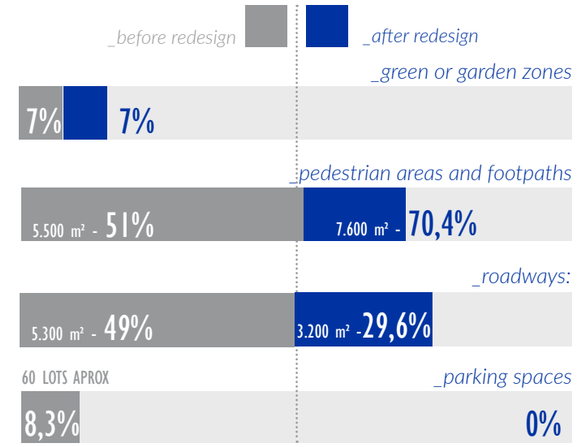


Figure 116. Plaza de Santa Barbara following redesign - Source: Authors

Figure 117. Plaza del Callao in 1962 - Source: Museo de Historia de Madrid

Figure 118. Plaza del Callao prior to redesign - Source: Ayuntamiento de Madrid

Figure 119. Plaza del Callao following redesign - Source: Ayuntamiento de Madrid

Figure 120. Aerial views of Plaza del Callao - Source: Instituto Geográfico Nacional

PLAZA DEL CALLAO

Plaza del Callao is one of the spaces that has been transformed most often in recent years. The first action was carried out between 1991 and 1995 and the most recent in 2009 and it will again be partially reformed under the Gran Via redesign project. The 2009 intervention removed the central island and bus bays, which were transferred to Calle de Jacometrezo and the area was covered in a continuous sheet of paving, all in the omnipresent grey Alba granite. Despite announcements to the contrary, all plants was also removed apart from a single tree, and only two individual benches were installed. The action diluted the area's position as a meeting point at the head of the Calle de Preciados axis, while maximising the amount of space that could be invaded by outdoor bars/cafés around the perimeter and the central area which was available for staging events, which were common until 2015. The new municipal authorities propose to use the redesign work on the Gran Via to relieve some of the negative impacts of the previous action in the square. The plan is to add more plants, create physical limits to prevent sprawl by outdoor bars and cafés, and install street furniture, all intended to restore the square's role as an area for rest and recreation, as it always had been before.

_total land area: ***20.697 m²(4.050 m² plz. Callao)***

_operation: ***Plaza del Callao, calle Preciados, Jacometrezo, Silva y San Bernardo y cuesta de Santo Domingo***

_start date: abril ***2009***

_budget: ***4.92 M €***

_agent: ***D.G. of Public Works***

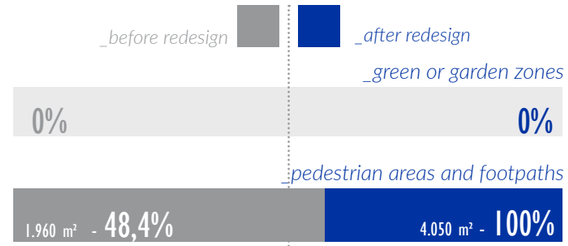


Figure 121. Plaza del Callao following redesign - Source: Ayuntamiento de Madrid

Figure 122. Puerta del Sol in 1962 - Source: Museo de Historia de Madrid

Figure 123. Puerta del Sol in 1962 prior to redesign - Source: Museo de Historia de Madrid

Figure 124. Puerta del Sol following redesign - Source: Authors

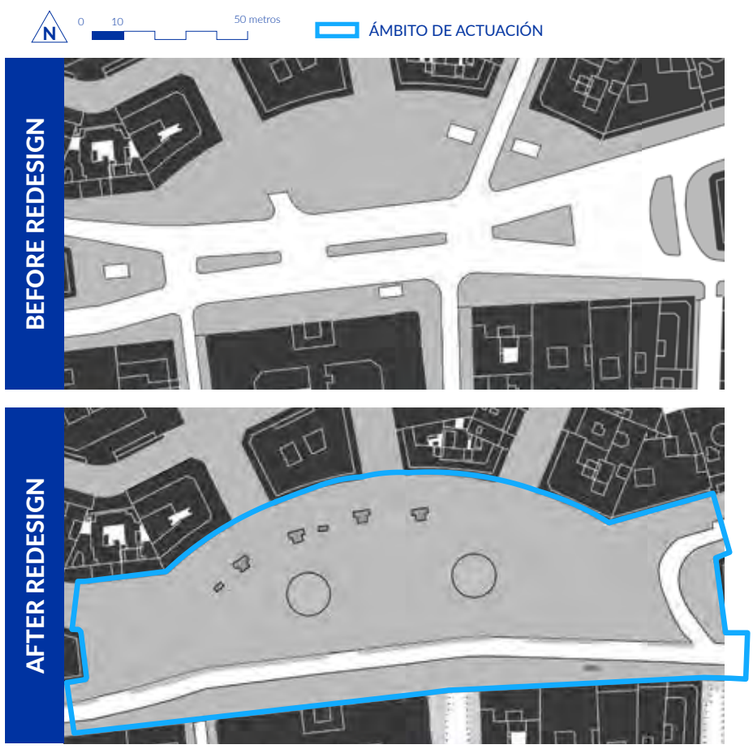


Figure 125. Aerial views of Puerta del Sol - Source: Instituto Geográfico Nacional

PUERTA DEL SOL

_total land area: **12.900 m²**
_square: **Puerta del Sol**
_start date: sept **2009**
_budget: **4.7 M €**
_agent: **D.G. of Public Works**

The public space of Puerta del Sol has been remodelled twice. The first action, in the 1980s, set the guidelines for this type of intervention in the following years, not only in Madrid but throughout Spain. Although it was a mainly "hard" design, some vegetation was included, and new street furniture was added. Most importantly, traffic was moved away from the centre of the square.

However, the original action was gradually replaced. First, almost symbolically, the modern lampposts were replaced with other more "historical" ones. Finally, following construction of the suburban rail station—which began in 2004—the square was completely transformed. In 2009, nearly 5 years later, and with state funding under the Plan E, and with the eternal argument of "gaining space for pedestrians" with the transferral of the termini of the Canalejas bus lines (along the same lines as in Plaza de Santa María Soledad Torres Acosta and Plaza del Callao), a very uniform hard surface was created (in the same type of granite). All trees and street furniture, particularly benches, were removed and only and only the two fountains were retained, whose narrow now became the only place for pedestrians to sit. Following an initial unsuccessful competition of ideas, organised by the College of Architects, the City Council is now making preliminary studies for an intervention that will change the nature of the square, as it also plans to do in Plaza del Callao, taking advantage of the work in Gran Via.

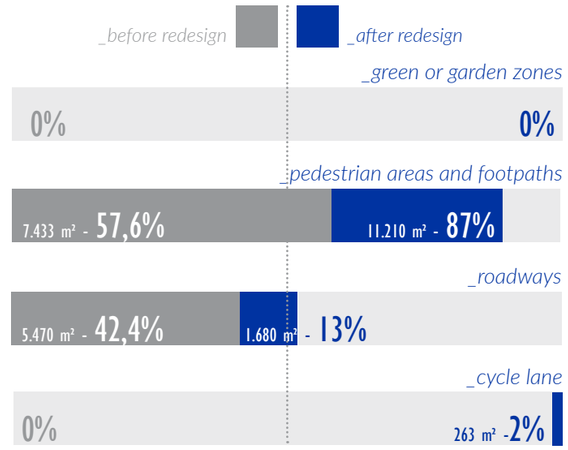


Figure 126. Puerta del Sol following redesign - Source: Authors

MALASAÑA
Dos de Mayo Area of Priority Rehabilitation

11 CALLES DE CHUECA

HUERTAS
Huertas - Las Letras Integrated Rehabilitation Area

LAVAPIÉS
Lavapies Area of Priority Rehabilitation

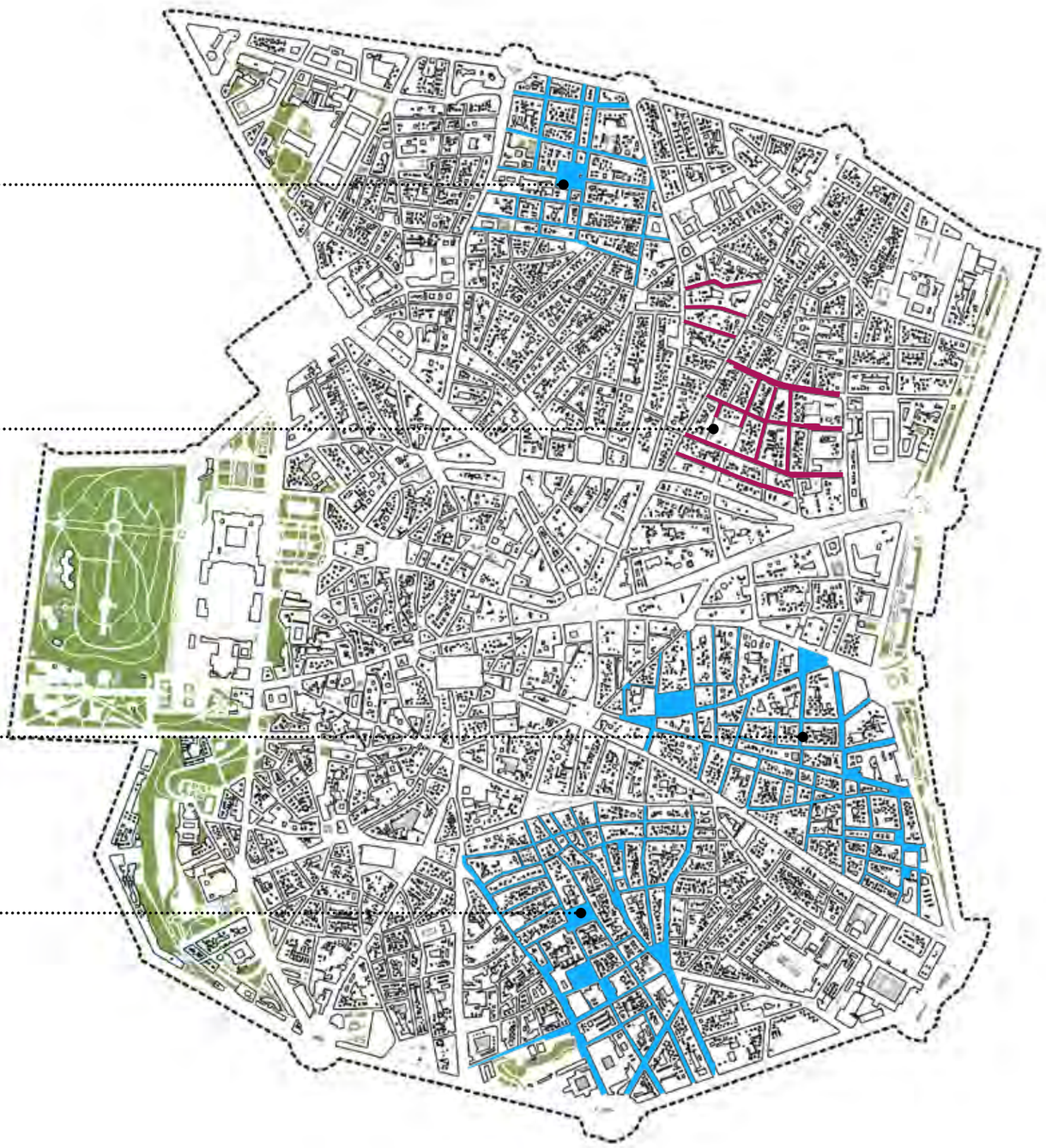


Figure 127. Calle Monteleón following redesign - Source: López de Lucio et al. (2016)

Figure 128. Plaza de Lavapiés following redesign - Source: Authors

Figure 129. Junction between Calle Moratín and Calle de las Huertas following redesign - Source: López de Lucio et al. (2016)

ACTIONS ON NEIGHBOURHOODS

Prior to the current legislature, the various actions carried out in different stages at neighbourhood (barrio) level, as part of the various Refurbishment Area schemes (APRs, ACRs and ARHCs), constituted the most profound transformation of the public space in the district. Even now, they have only been exceeded in their scope by the RPA at district level and the redesign project for the Gran Via. Generally speaking, these interventions involved a vast—if diffuse—recovery of space for pedestrians, albeit some proved more successful than others, reversing the process of occupation of the space by the automobile in the 1960s and 1970s. In this regard, given the characteristic narrow streets of the organic street plan of Distrito Centro, the most important changes were not to the traffic lanes per se, but to the parking zones. All of these actions (Dos de Mayo, Lavapiés, Huertas, Pez-Luna) have involved a reduction in the number of ground-level parking spaces, only made up for in some cases by the creation of underground car parks that meet the demand for resident parking, and thus go a long way to reducing opposition. To give some idea of the scale of the transformation, the Lavapiés ACR did away with 927 ground-level parking spaces, out of a current total for the entire Distrito Centro of 9,500, according to figures from the Regulated Parking Service.

Each of the principal actions has its own particular characteristics. The pioneering intervention in **Dos de Mayo** to a great extent established the guidelines for subsequent actions. Criticisms were levelled against the poor material execution of the project, largely due to a lack of experience applying some construction solutions. In this case, the reduction in ground-level parking spaces was not compensated by new underground car parks.

The **Lavapiés** intervention—both in general terms and in its development aspects—was a more complex operation, which incurred major financial costs in the creation of the Casino park and the construction of underground car parks. In the **Huertas** operation, ornamental and cultural aspects tended to be oversized

(for example, the concept of the "Literature quarter" is illustrated with phrases in metal letters set in the paving, commemorative plaques, etc.) because of the area's links to a larger tourist axis.

The most recent **Pez-Luna** action (for which no specific file is included here), involved some major contradictions, in many ways characteristic of this last period. The action on the Plaza de Soledad Torres Acosta, described at length in previous chapters, was executed by a different Area of Government to that which was responsible for the project as a whole. The hard option used in the square contrasts with the more people-friendly approach used in other streets, with different solutions that combine shared spaces and pedestrian streets, and a reduction of 48 parking spaces on the public roadway. In this case the progressive trend towards transformation of the public space, as exemplified by the development of the ARHC, clashed with the rapid emergence of this type of square design, where although spaces were also reclaimed for pedestrians, no form of classification was provided.

Figure 130. Calle Ballesta (Pez-Luna) following redesign - Source: José Javier Bataller

Figure 131. Calle Madera (Pez-Luna); following redesign - Source: José Javier Bataller

Figure 132. Scope of the Dos de Mayo Area of Priority Refurbishment

Figure 133. Calle Manuela Malasaña following redesign - Source: López de Lucio et al. (2016)

MALASAÑA

Dos de Mayo Area of Priority Rehabilitation

Figure 134. Calle Monteleón following redesign - Source: López de Lucio et al. (2016)

Figure 135. Plaza del Dos de Mayo following redesign - Source: López de Lucio et al. (2016)

_scope of the activity ***23 Ha (Phase 1)***

_neighbourhood: ***Universidad (Malasaña)***

_date: ***1994 - 2002***

_budget: ***69M € (corresponding to the two phases)***

_agent: ***EMVS***

_1st phase: ***Carranza, San Bernardo, San Vicente Ferrer and Fuencarral streets***

_2nd phase: ***Pez, Jesús del Valle, El Escorial and Corredera Alta de San Pablo streets***

_3rd phase: ***extension of the area of action towards the south (Calle Pez, and Plaza de Soledad Torres Acosta)***

_intervention in building: ***intervention in 345 buildings (241 subsidised), which corresponds to 68% of 3.910 total apartments***

The Dos de Mayo Area of Priority Refurbishment was pioneering as an action of comprehensive redevelopment included in a Refurbishment Area. The first phase, which won the Prize for Urban planning, Architecture and Public Work in 1995, affected an area of 23 hectares, bounded to the south by Calle de San Vicente Ferrer and extended in the second phase to Calle del Pez. For the first time, the project included physical constraints on road traffic, and the elimination of ground-level parking. In this case, however, no additional places were provided for residents in new car parks, since a plan for an automated car park on Plaza de Joan Pujol was turned down. New pedestrian areas were created, and vehicular traffic was restricted to a single side of Plaza del Dos de Mayo, the symbolic centre of the neighbourhood (which was also completely redeveloped) and its main area for rest and recreation. A systematic arrangement was introduced for streets depending on their width (10 or 7 metres). In the first case, footpaths were widened, with a high kerb and parallel parking between bollards and basins for trees. Narrower streets were made kerbless (i.e. footpaths and roadway at the same level), and the two areas were distinguished by different types of paving and bollards to protect the pedestrian space.

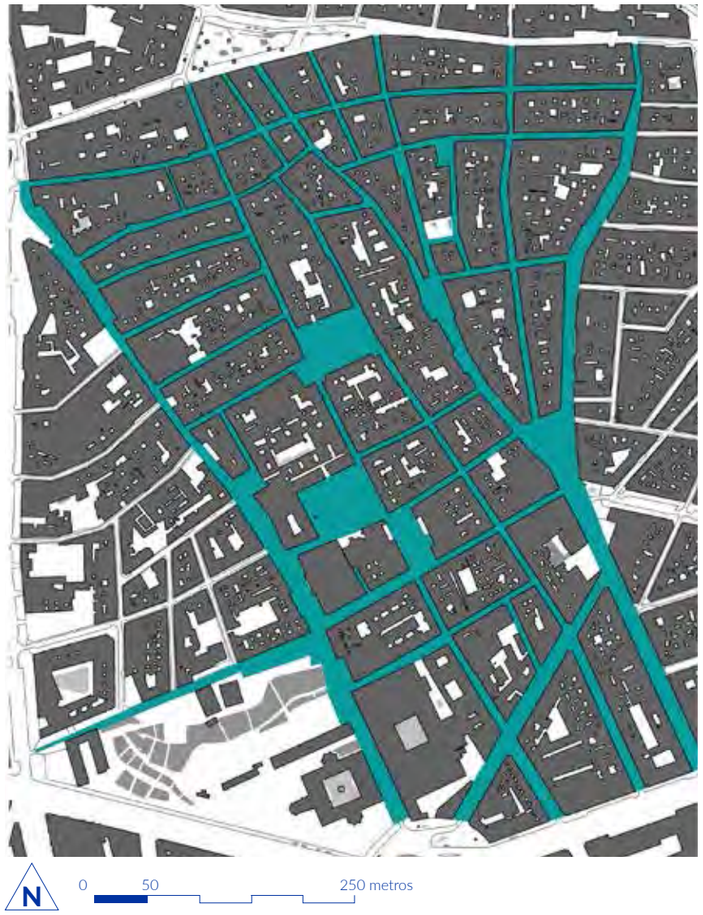


Figure 136. Scope of the Lavapies Area of Priority Refurbishment - Source: Authors

Figure 137. Plaza de Lavapiés in 2003 prior to redesign - Source: López de Lucio et al. (2016)

LAVAPIÉS

Lavapiés Area of Priority Rehabilitation

Figure 138. Plaza de Lavapiés and Valle Inclán theatre following redesign - Source: López de Lucio et al. (2016)

Figure 139. Casino de la Reina park following redesign - Source: López de Lucio et al. (2016)

_total land area: ***34,5 Ha (1ª fase)***

_neighbourhood: ***Embajadores (Lavapiés)***

_start date: ***1998***

_initial budget: ***90,5M € (1st phase), 51, 49 M € (2nd phase)***

_agent: ***EMVS***

_1st phase: ***action in 66 blocks, 756 buildings, 11.878 homes y 1.226 commercial premises***

Elimination of 927 out of 1.453 parking spaces. Construction of three underground car parks (Agustín de Lara, Cabestreros y Casino de la Reina)

_2nd phase: ***chiefly residential and social action***

The Lavapiés Refurbishment Area includes the most intense redevelopment undertaken to date, with renovation of services infrastructures, establishment of the important Urban Fabric "Sponging" Programme (Casino de la Reina park and Plazuela de Ministriles); and extensive changes to the roadway. Kerbs were removed, and interesting parklets created on streets where the width was irregular (e.g. Calle del Ave María and Calle de Lavapiés). Sixty-four percent of the existing ground-level parking spaces (927 out of 1,453) were removed. This was compensated by the construction of 3 large residents' car parks with a total of 1,303 parking spaces in Casino de la Reina (which resulted in the operation in the park being divided into two phases), Plaza de Agustín Lara and Plaza de Cabestreros. The result was a net increase of 376 parking spaces, although some of them were destined for specific activities, such as the University. This restriction on private vehicles was further extended when the neighbourhood was declared a Resident Priority Area (RPA) in 2006. However, it is worth noting that less attention was paid to Plaza de Cabestreros (now Plaza de Nelson Mandela), Plaza de Agustín Lara, Plaza de Ministriles and Plaza de la Corrala and as a result, in 2017 the present municipal government presented a project to provide additional vegetation in these squares.

Figure 140. Scope of the Huertas - Las Letras Comprehensive Refurbishment Area - Source: Authors

Figure 141. Reclaimed pedestrian space between Calle de Moratín and Calle de las Huertas following redesign - Source: López de Lucio et al. (2016)

HUERTAS

Huertas - Las Letras Integrated Rehabilitation Area

Figure 142. Caixa Forum with the new square and vertical garden - Source: López de Lucio et al. (2016)

Figure 143. Casino de la Reina park following redesign - Source: López de Lucio et al. (2016)

_total land area: ***37,08 Ha***

_neighbourhood: ***Letras (Huertas)***

_year of redesign: ***2000 - 2010***

_budget: ***42,4M € in total (10,36M € in redevelopment works)***

_agents: ***EMVS and Infrastructures Area***

_phases: ***works of redevelopment carried out in three phases between 2006 and 2011***

Considerable reduction in ground-level parking spaces. Underground residents car park on Calle de la Alameda

_building renovation: ***rehabilitation of 336 premises (3.510 homes, 58,5% of total)***

The redevelopment action, which had a total budget of EUR 10.36 million, consisted of three phases between 2006 to 2011. It combined full pedestrianisation of Calle de las Huertas as a tourist axis, with the incorporation of roadside trees with other arrangement. In the final section of Calle de las Huertas itself, the existing axis of the pedestrian route was maintained, and the single one-way road lane moved to the north. On other streets, an extensive kerbless arrangement was introduced, with the central strip differentiated with paving stones, to allow the area to be shared by vehicular and pedestrian traffic. The action again involved a major reduction in the number of ground-level parking spaces which was only partially mitigated by the construction of a small mechanised underground carpark at the junction of Calle del Gobernador and Calle de la Alameda (178 spaces). Notably, small parklets were created in different areas, such as the front of the Caixa-Forum and some areas where the Calle de las Huertas was widened, as well as the renovated Plaza de la Platería de Martínez. In the third phase, affecting Calle del Prado, parking spaces were concentrates in the area close to the Palace Hotel and a new model of noise-reducing paving stone was laid.

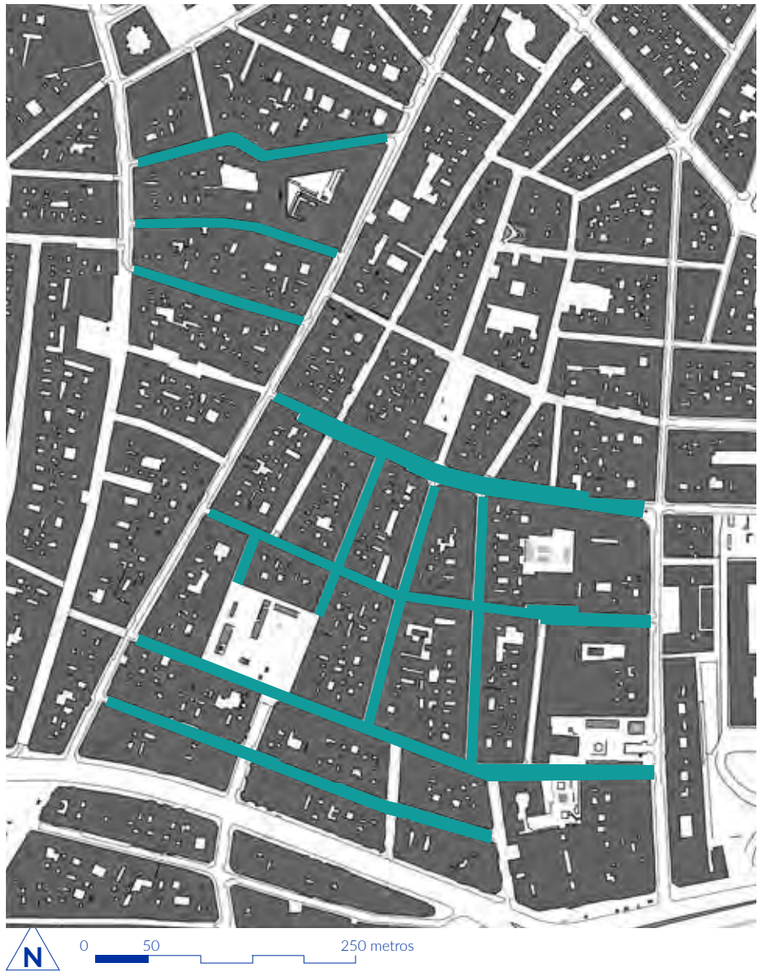


Figure 144. Scope of the 11 streets of Chueca - Source: Authors

Figure 145. Calle de Hernán Cortés following redesign - Source: JMDCentro

CHUECA
11 streets of Chueca

Figure 146. Calle de Hernán Cortés; following redesign - Source: JMDCentro

Figure 147. Calle de Hernán Cortés; following redesign - Source: JMDCentro

_total area: ***2 Ha***

_neighbourhood: ***Justicia (Chueca)***

_start date: ***2017***

_budget: ***4.154M €***

_agent: ***D.G. of public space***

_actions: ***Hernán Cortés, (first to be completed), Santa Brígida, Farmacia, Augusto Figueroa, San Marcos, Infantas, de la Reina, Costanilla de los Capuchinos, San Bartolomé, Barbieri and Libertad streets***

This project affects the Chueca neighbourhood, leaving its main rest and recreation areas—which had been previously redesigned— unchanged (the Plaza de Vázquez de Mella (now Plaza de Pedro Zerolo), under a 1997 EU URBAN project, and the Plaza de Chueca itself, redesigned under an agreement with the Fundación Caja Madrid in 2000). With a total budget EUR 4.154 million, the intervention affects Calle de Hernán Cortés (which was completed and opened in August 2017), Calle de Santa Brígida, Calle Farmacia, Calle de Augusto Figueroa, Calle de San Marcos, Calle de las Infantas, Calle de la Reina, Costanilla de los Capuchinos, Calle de San Bartolomé, Calle de Barbieri and Calle Libertad, some of which were partially included in the 1997 project. On all of these streets, the kerb has been removed, and the roadway paved. The bollards separating the footpath and roadway have been removed, at least on one side of the street. A drainage strip is being added with obstacles to prevent illegal parking. This has made it possible to widen the narrow footpaths, which were formerly less than 1 metre in width. Altogether, 140 ground-level parking spaces are being eliminated, compensated for by the new underground car park built in 1997 (which currently has 107 rotation spaces and 261 spaces for residents)

Figure 148. Project for redesign of Oxford Circus / Exhibition Road - Source: Greater London Authority

INTERNATIONAL COMPARISON

Since the 1960s, the central districts of many cities (mostly in developed countries, but also in some developing nations), have seen transformations of the public space related to an improvement in non-motorised forms of mobility. There is a clear move towards reducing the space made available to private cars, prioritising more sustainable modes of transport (walking, cycling, public transport) on the grounds of sustainability, energy efficiency, environmental quality and public health. The first schemes were introduced in some very central streets, transforming areas of motor traffic into pedestrian areas, mainly designed as "urban living rooms" serving to support the retail frontage on either side. In many cases, such moves have sparked controversy between traders' associations and local authorities, but the evidence appears to show that after some decline in business during alteration work, trade soon recovers and subsequently increases.

Pioneering Actions

In this section we shall briefly looks at some of the most important actions, starting with the Nordic countries. The pioneering pedestrianisation scheme may be considered to be the **Strøget**, ein Copenhagen, Denmark (file 10), advertised as the largest pedestrian shopping street in the world. It now forms the hub of a pedestrian network that has grown from 15,000 square metres under the initial scheme in 1968 to 100,00 square metres at present. This progressive pedestrianisation of large areas of the centre is tied into an active policy of bicycle mobility. Copenhagen recently announced that the number of bicycles operating in the rest of the city now exceeds the number of automobiles, following a 68% growth in numbers over 20 years.

It is no coincidence that Copenhagen is the home of Jan Gehl, who was one of the designers of the new pedestrian-centred urban concept, in his books Life between Buildings (1971) and Cities for People (2010). Gehl has been involved in other outstanding projects of this type, such as the design of the area surrounding the **Al-Ashrafieh Square**, in Amman, Jordan, in 2006 (file 07), and transformation of **Times Square**, New York, in 2009 (file 06). Gehl's influence is global, and his involvement has helped lever change in some of the most far-reaching schemes, as in the case of New York, where Times Square was the launchpad for a more ambitious plan promoted by Janette Sadik-Khan, the commissioner for transportation in the Bloomberg administration (analysed at greater length below).

Europe

Other European cities have followed Copenhagen's lead. In **France**, Paris has introduced an ambitious action, involving closing the motorway built in 1967 which still runs along the northern bank of the Seine, parallel to the Quai des Celestins on a lower level. Already, for several years, the motorway had been closed

each year during the summer period for the Paris Plages programme, when it is turned into an artificial beach. In this way, the city has reclaimed its waterfront (initially for a test period of 6 months), without needing to run the motorway underground.

The other most significant actions in the country have been in medium-sized cities such as Nantes and Angers. **Nantes** has seen a profound urban transformation, one of the key reasons why its mayor, Jean Marc Ayrault, was appointed as prime minister in the first Hollande administration. The work on the **Cours des 50 Otages** is particularly significant (file 17) involving a subtle transformation, including widening footpaths, providing a reserved platform and reducing roadway space for private traffic. This scheme has been largely overshadowed by the city's star development scheme in l'Île de Nantes.

Angers (file 18), also has an extensive pedestrianisation scheme affecting both linear routes (Boulevard Foch) and areas (the so-called plateau pietonnier) in the historical centre. In both cases the changes have been linked to the building of a tramway.

Similar actions are also being introduced in **Germany**. During 2019, it is planned to close Berlin's main central avenue, the **Unter den Linden** to private traffic (file 14). Unter den Linden (literally, "under the plane trees") is also almost the symbolic heart of Germany, a kind of "Teutonic Champs Elysees" as The Guardian puts it. Its closure will therefore have an even greater political impact than the Gran Via in Madrid. The avenue has already been partially closed, coinciding with work on the U-Bahn (the Berlin underground railway), cutting traffic flow from 30,000 vehicles per day to just 8,000.

In **Hamburg** too, there have been important changes, for example on the **Spitalstrasse**, (File 15), the fifth most important street in Germany by volume of pedestrians. Again, the scheme forms part of a wider local continuous green infrastructure policy, which extends beyond the small-scale strategy. The idea is to eliminate a high percentage of private traffic by 2030, combining actions in the centre and in the suburbs.

Also in Central Europe, the dynamic in **Austria** has been similar to that in Denmark and Germany. The early actions carried out in **Vienna** in 1974 in **Graben and KohlMarkt** (File 11) also affect central shopping streets, and as in the case of Berlin, work on the underground railway has been used as a pretext for introducing an adaptation period before final pedestrianisation. And like Copenhagen, the incremental approach to the actions has extended outside the centre in the case of **Mariahilfer Straße** (File 12) with an axis running from the city's inner ring road and the outer Gürtel, which surrounds the area of nineteenth-century expansion. The importance of this action lies in its complexity; the pedestrian axis was extended by creating "compatible" zones, combining varying degrees of pedestrianisation and shared traffic.

Pedestrianisation schemes have also been introduced in the **United Kingdom,** although these were introduced after other mobility measures, particularly involving the promotion of bicycle mobility. The new mayor of **London**, Sadiq Kahn, recently announced that he was doubling the amount to be spent on cycling over the next 5 years, to nearly one billion euro, 5.5% of the total mobility budget. This compares to a 2.4% share under his predecessor Boris Johnson, and amounts to nearly 18 pounds per person, on a par with the Netherlands. Johnson had in turn continued along the path taken by his predecessor, Ken Livingstone, who in 2003 imposed a "congestion charge" on motor vehicles in central London, tripled the budget for bicycle mobility, promoted the construction of "cycle superhighways" and in the last stage phase of his mandate, also created traffic calming areas in some suburban boroughs, the so-called "mini-Hollands". But above all,

Johnson achieved his goal of making cycling "more popular and more normal", with his active promotion of "more human streets" and even appearing commuting to work each day himself on his bicycle. The push for "cultural" actions that would encourage sustainable mobility among the general public also began under Livingstone, during whose term in office a plethora of cycling guides and maps of cycle routes was produced.

Nonetheless, in the latest stage, "hard" reform actions have also been carried out on the public space in London. The earliest such scheme was the pedestrianisation of **Exhibition Road** (File 10), a secondary shopping street in the borough of Kensington. The changes being introduced in **Oxford Street**, London's principal shopping axis (comparable to Madrid's Gran Via) are expected to have a greater impact, and according to a recent announcement, the street is also going to be pedestrianised.

Actions of this type are not limited to London. They extend to other major cities, such as **Manchester** and **Birmingham**, where a public-private partnership is working on the **Paradise Project**, an ambitious urban regeneration scheme (File 10), in which profits from refurbishment of private buildings will be used to finance the intervention in the public space. However, the development has run into a familiar problem with this kind of action, especially when the private sector is involved: it has been held up by local people protesting against the gentrification of the area. As we shall see, a similar process has also happened in several Latin American cities.

Finally, to complete the list of European experiences, it is also worth mentioning the pedestrianisation of **Arbat Street,** in **Moscow, Russia** (File 10), which was undertaken quite early on, in 1986. Here too, the operation involved a shopping street on a medieval street plan, and renovation work on urban infrastructures was used as an opportunity for pedestrianisation. Subsequently, the area has also seen intense gentrification, mainly in the retail market, with an influx of luxury stores.

The Americas

In **North America,** Vancouver—the third largest metropolitan area in Canada—has played a similar role to that taken by Copenhagen in Europe. By 2015 the city had already met its 2020 target of achieving a sustainable transport share of 50% of all trips. This was achieved by applying a raft of different measures, including pedestrianisation, the creation of a large cycling network and reserved public transport platforms, as described in a documentary by Streetfilms.

Other cities in North America are following Vancouver's lead, starting with **New York**. Jannette Sadik-Kahn, commissioner for transportation under republican mayor Mike Bloomberg, introduced an ambitious plan, similar to Vancouver's, which included partial or complete pedestrianisation of such significant sites as **Times Square** (File 15), Broadway, Herald Square and Madison Square, as well as the iconic Flatiron building, in line with Gehl's notion of "placemaking". Sadik-Kahn, co-author of "Streetfight: Handbook for an Urban Revolution" who Bloomberg (still her boss, since she now works for one of the former mayor's foundations) defines as "the daughter Robert Moses and Jane Jacobs never had", also launched a network of express buses, a public bike rental service and an extensive cycling network. One of the wise choices taken in the transformation of New York was to implement low-cost actions; the alterations did not require large-scale or costly material changes, just paint sets, signposts and the installation of street furniture. This has allowed a much larger number of actions to be taken, and once consolidated, the quality of the

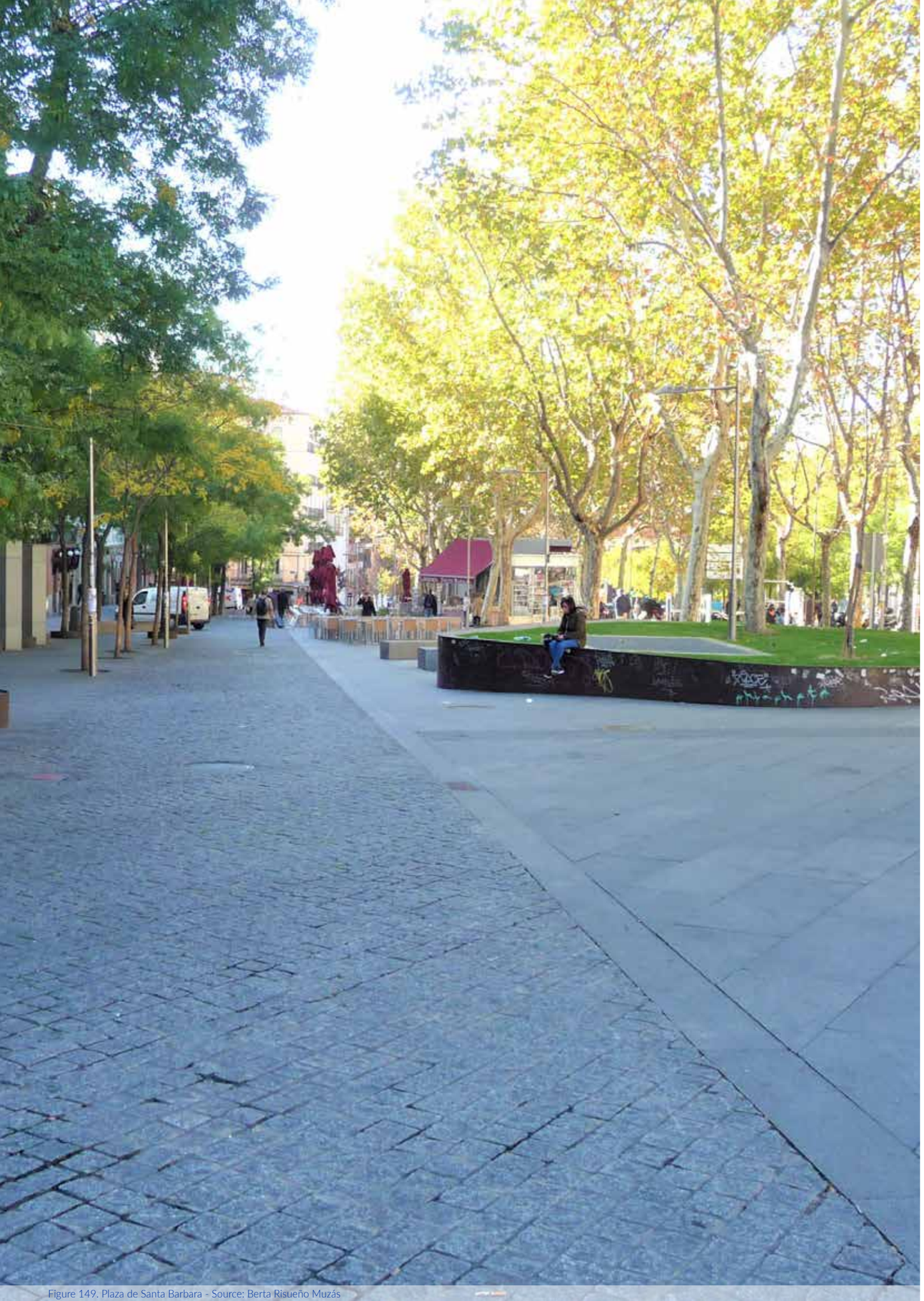


Figure 149. Plaza de Santa Barbara - Source: Berta Risueño Muzás

materials can gradually be enhanced (a case in point is Times Square and the later design by the Snohetta studio, 7 years after Gehl's original project)

In **Latin America**, the most significant examples are perhaps **Santiago in Chile and Bogotá in Colombia**. The pioneering scheme in Chile was the pedestrianisation of the Paseo Ahumada (File 1), one of the historical routes crossing the city along the old "Inca Way", which links the Plaza de Armas to Alameda O'Higgins, and is also an important shopping street. Overall, the action was judged to have been a success and people now speak of "the Ahumada effect". It was recently further complemented with a complex action affecting several elements of the **historical centre** (File 2). This involves the creation of public transport routes, widened footpaths, the elimination of parking spaces, the pedestrianisation of special sites such as the area around the Central Market and the creation of a pedestrian axis (the Huelén project,) between two of the city's main green areas, the Quinta Normal and the Cerro Santa Lucía.

In Colombia, **Bogotá** has a long record of mobility-related actions, including introduction of the **TransMilenio** BRT system and the creation of a large cycle network under the Peñalosa/Mockus administrations. However, these involved structural interventions at a city level and had a greater impact on outlying areas. In contrast, actions in the historical centre have tended to lag behind. Recently, however, two operations have been widely covered in the media. The **Carrera Séptima** scheme in central Bogotá (File 3), affects one of the city's symbolic hubs, between the Gold Museum and the Church of San Francisco. Undertaken at almost the same time, the **Zone G development in Chapinero**, one of the city's historical sub-centres (File 4), affected an area with a large number of catering establishments. Both projects have encountered protests from local people, fearing gentrification of the neighbourhood.

Asia and Oceanía

In **Australia, Melbourne's** central **Swanson Street** has been partially pedestrianised (File 6), with pedestrian traffic sharing the road with a tramway. The scheme was introduced gradually between 1990 and 2012. Of particular interest is the 24-hour Pedestrian Counting System, which can be accessed over the Internet.

In **China**, the action on **Shanghai's** traditional high street, the **Nanjing Road** (File 6), is important because of its size (the street is 5.5 km long) and its strongly commercial nature.

Away from the more westernised Pacific coastal areas of Asia and Oceania, mention might also be made of the intervention in the area around **Al-Ashrafieh Square, in Amman, Jordan,** carried out in 2006 by Jan Gehl's team. Although the architect does not consider the project to be one of his most outstanding, it does reflect how far his influence extends worldwide.

SANTIAGO DE CHILE

Paseo Ahumada

Completed in the 1970s, pedestrianisation of Paseo Ahumada was the first major project of its kind in Santiago. A section of Calle Ahumada between the Universidad de Chile and Plaza de Armas metro stations (on Alameda del Libertador Bernardo O'Higgins—the city's main artery—and the Plaza de Armas, respectively) was closed to road traffic.

Despite the inevitable opposition of retails outlets in the area, the project has since proved to be successful. The term "Ahumada effect" is now widely used in Chile, not only in reference to the popular extension of the model to neighbouring streets, but also to the increase in business and pedestrian footfall and, significantly, the fact that the street now has some of the highest commercial and office rentals in this region of the world.

Initial complaints levelled against the project included an inevitable increase in (casual, non-violent) crime. This problem has been reduced by having an important police presence in the area. An agreement has been reached to remove all ground-level parking and to limit loading and unloading strictly to certain times and to light vehicles.

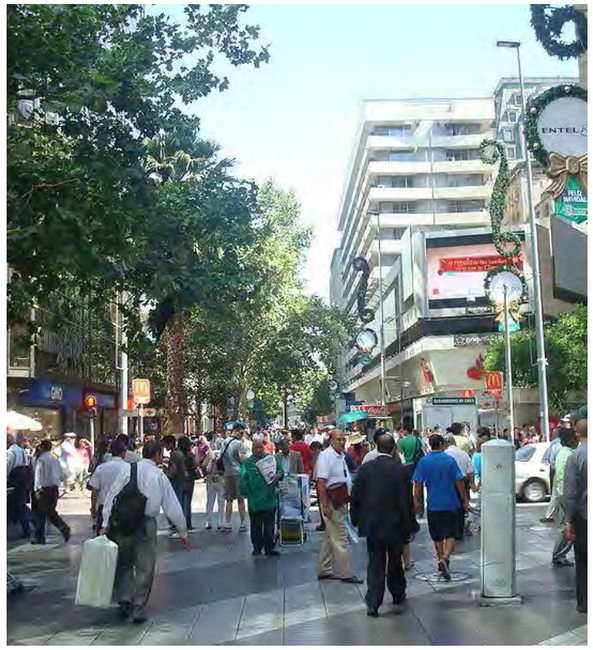


Figure 150. Paseo Ahumada in 2009 - Source: Wikimedia Commons

Figure 152. Paseo Ahumada, 1970s - Source: Twitter @ FotosHistoricasDeChile

Figure 151. Modal distribution - pedestrian, private vehicles and public transport, in Calle Ahumada, c. 1940. - Source: Twitter @ FotosHistoricasDeChile

SANTIAGO DE CHILE

Project for Pedestrianisation of the Historical Centre (partially operative)

Figure 153. Diagram of the scheme - Sources: El Mercurio and Municipalidad de Santiago

Figure 154. Computer graphic of Calle Puente (completed), in the environs of the Central Market - Source: Municipalidad de Santiago

Figure 155. Pedestrianisation of central Santiago - Source: Javier Ruiz Sánchez

This project includes a series of coordinated actions, which add to the existing pedestrianisation of Paseo Ahumada, and the adjoining Calle Huérfanos and Calle Estado.

Its greatest interest lies in its strategic approach, with several different actions coordinated in a single joint design. For example, the project envisages concentrating public transport and rerouting along main arteries such as Calle Merced—where footpaths will be widened and a single low-speed lane maintained, and sections of Calles San Martín, San Antonio, Santo Domingo and Amunátegui, with vehicle access confined to residents.

All ground-level parking will be completely eradicated, while underground parking and the current concessions, totalling 3,000 parking spaces, will be maintained.

Of particular interested is the "Huelén Project", an east-west greenway connecting west two important historical parks in central Santiago, Cerro Santa Lucía and La Quinta Normal. This will involve partially covering a segment of the underpass on Calle Santa Lucía with the Alameda as part of the axis.

Pedestrianisation of some streets will create a number of themed areas, such as the gastronomic zone around the Central Market. It is planned to connect this area to the Cal y Canto Metro station—currently an area of heavy vehicle traffic— which will be remodelled y way of an international competition (Explanada Mapocho La Chimba).

BOGOTÁ (COLOMBIA)
Carrera Séptima

Pedestrianisation of Bogotá's Carrera Septima, between Calle 10 and Avenida Jiménez has been one of the most controversial pedestrianisation schemes in Latin America in recent years and became a major issue of debate in the 2015 mayoral elections. Today, however, its success is unquestionable.

The scheme involves providing a pedestrian link between two of the most important tourist focuses in the city, Plaza Bolívar and the Santander Park, close to the Gold Museum and the Church of San Francisco. The very short section involved—just five blocks long—is envisioned as an urban living room, with paving stones and "memory" features, such as the old tram tracks.

The 12,000 square metres of new paving, which was completed in September 2015, required restructuring the local traffic and public transport lines. The pedestrian zone stands close to some major architectural features, whose presence has been underscored with major improvements in perspective views (the Cathedral, the Church of San Francisco, the Manuel Murillo Toro building –now the Offices of the Ministry for Information and Communications Technology, etc.).

Following an initial drop-off in business during construction work, local traders have seen a growth in sales (although there has also been an increase in the number of homeless) and the success of the scheme has led the council to consider extending the action. For the moment, further sections to the north of the zone are closed off using moveable barriers on specific days and times (Friday evenings/nights) to host street art (theatre, mime, music) and food stalls.

Figure 156. Pedestrianisation of Carrera Séptima - Source: Alcaldía Mayor de Bogotá

Figure 157. Pedestrianisation work on Carrera Séptima in Bogotá (Colombia) - Source: Wikimedia Commons

Figure 158. Paving treatment during construction - Source: SkyscraperCity

BOGOTÁ (COLOMBIA)
Zona G-Chapinero

Figure 159. Photomontage of the proposal - Source: Alcaldía de Chapinero

Figure 160. Proposed alteration to volumes associated with the action - Source: Alcaldía de Chapinero

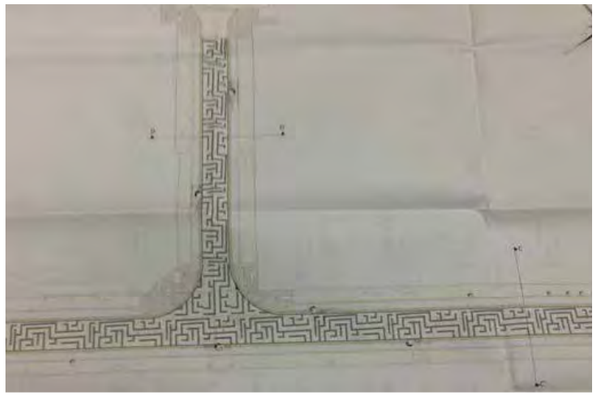


Figure 161. Development plan. Alignments and design of paving - Source: Alcaldía de Chapinero

This project is very limited in scope, covering just three sections of street that affect four blocks in Zone G of the Chapinero sector, between Carrera 5 and Carrera 7 and Calle 69A and Calle 70. The project has been hotly contested by several sectors of civil society, for varying reasons. Chapinero is an emerging sector, which houses universities, restaurants, clubs and a range of retail outlets. The strong trend towards gentrification of the area is best exemplified by Zone G, the city's fashionable restaurant centre. Several critics believe that the costs of the operation are very high, given that it is only serving to speed up this process. An association called 'Friends of Zone G' has called for a transparent participation process.

Efforts are being made to overcome the impasse, through a new management body known as a "Corporation", comprising local municipal authorities, agents, businesses and residents' associations.

Traditionally, Bogotá has not been a pedestrian-friendly city, and any action intended to improve conditions in this regard tends to be controversial. In this case, moreover, there is also a feeling among some sectors that a disproportionate amount of public resources are being spent in the service of raising private incomes, with no return for society at large.

Figure 162. Photomontage of the proposal - Source: Alcaldía de Chapinero

CAP: 11 | AP: 6

MELBOURNE (AUSTRALIA)

Swanston Street Walk

In recent years, increased focus on pedestrianisation in Melbourne has led to the implementation of the 24-hour Pedestrian Counting System, which monitors pedestrian demand and provides a breakdown by hours and subjects. The system is being linked to a growing number of cases where it has been decided to progressively pedestrianise large areas the city. The general public can access the system over the Internet, thus ensuring that the information cannot be altered.

In 1992, to commemorate the 150th anniversary of the town, it was decided to partially pedestrianise Swanston St., one of the city's main arteries, limiting traffic at certain times of day to residents, loading/unloading and emergency traffic. Subsequently, a number of proposals were made to apply the experience from the first pedestrian zones to the entire length of the street, with greater restrictions on automobile traffic, culminating with the 2012 action.

Melbourne plans to be car free by 2030. The first pilot schemes for getting rid of cars are currently being run in suburbs that were originally designed for this purpose.

Figure 164. Proposal for introduction of a tramway - Source: The Metro Rail Project

Figure 163. Swanston Street, 2009 - Source: Flickr: Alpha (@avlxyz)

Figure 165. Proposal for introduction of a tramway - Source: The Metro Rail Project

CAP: 11 | AP: 7

NUEVA YORK (USA)

Times Square

Figure 166. 2009 action - Source: Jan Gehl Studio

Figure 167. Permanent proposal, Snøhetta team - Source: Snøhetta

In 2009 and 2010, under the mayorship of Mike Bloomberg, a segment of Broadway around the iconic Times Square was experimentally pedestrianised. The experiment was planned to be reversible, using only street markings and light street furniture. The aim was to consolidate the operation only through implementation by using highly flexible low-cost infrastructure.

As a result of the success of the action, it has been decided to permanently pedestrianise the avenue between 42nd and 47th streets, the most significant section being between 42nd and 43rd.

The goal of turning Times Square into an open area, with pedestrian-friendly furniture and no sidewalks, which can host events, is considered to have been a success. In addition to the traditional New Year' Eve celebrations, other civic events are now held at the site, attracting large numbers of people, but most significantly, there has been an increase in commercial activity and a major improvement in environmental quality.

Figure 168. Times Square from the top of the stands - Source: Jean-Christophe Benoist

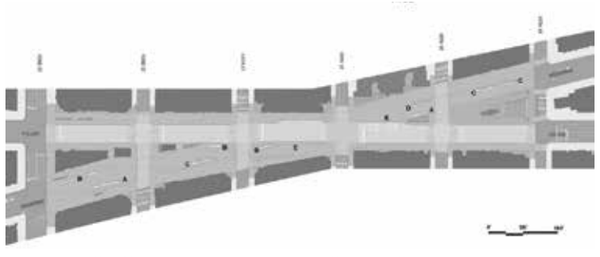


Figure 169. Overall plan and diagrams - Sources: Snøhetta

Figure 170. Times Square in 2009 - Source: Flickr (@pepsiline)

CAP: 11 | AP: 8

AMMANN (JORDAN)
Al-Ashrafieh Square

The Al-Ashrafieh Square is the centre of the Armenian quarter of Amman, in Jordan. Encompassing the Ashrafieh Mosque, and standing in a commanding position overlooking the city, the square operates both as an urban landmark and as a sub-centre of activity.

The square has been the subject of comprehensive remodelling, begun in 2006 and coordinated by the Danish firm Gehl Architects, involving pedestrianisation of the square and valorising of the adjoining buildings, including renovation of some buildings to a unified design.

Figure 171. Prior to the action - Source: Gehl Architects

Figure 172. Following redesign - Source: Gehl Architects

CAP: 11 | AP: 9

SHANGHAI (CHINA)
Nanjin Road

Figure 173. Nanjing Road - Source: Wikimedia Commons: P.B. ~Commonswiki

At five and a half kilometres, Nanjing Road is the world's longest shopping street and one of the busiest in terms of business turnover. It comprises two sections. The eastern section is in the Huangpu District and runs from the Bund to People's Square; while the western section begins at People's Square and extends as far as Jing'an.

Nanjing Road East has always been Shanghai's high street. It was extended westward with expansion of the city following the Second World War. In 2000, as part of a municipal development plan, work began to reconfigure Nanjing Road as a pedestrian street, boosting commercial activity. The first pedestrianised zone, which is over a kilometre long, runs between He'nan Road and Xizang Road, and has an average width of around 28 metres.

Figure 174. Nanjing Road by night - Source: Quanjing.com

CAP: 11 | AP: 10

LONDON (UNITED KINGDOM)

Exhibition Road / Oxford Street

Discussion of the possible pedestrianisation of some of London's central streets—particularly Oxford St.—has been ongoing for decades, at least since traffic expert Christian Wolmar stood for election as mayor at the end of the 1990s. In the latest council elections, all parties included the measure in their manifestos, and it was a key feature in the successful platform of the Labour candidate Sadiq Khan. Congestion on the section slated for pedestrianisation, which is roughly a mile and a quarter in length, is such that motor traffic barely moves faster than pedestrians, and a large number of bus lines have to compete with other vehicles. The issue of bus services is central to the process of choosing the best model. In 2014, a report by King's College showed unsustainable levels of pollution and the need for urgent action to be taken.

Despite differences in terms of centrality, position and topology, many analysts have looked to the experience on Exhibition Rd. in South Kensington. In 2011 this artery, which runs close to local shopping streets and cultural areas, saw the most significant pedestrianisation scheme (actually involving the introduction of traffic calming and sharing) in London. This operation is important and relevant, given the contrast between its ambition, the recovery of the space for pedestrians, and the measures deployed, with almost no street furniture and streetlights distributed along the central axis, unconsciously signalling the submission of private cars to other modes of transport.

The first measure has been to ban access to private vehicles between 7 am and 7 pm and all-day Sunday. Since 2005, under a decree by former mayor Ken Livingstone, the Christmas season and some other days are classed as "traffic-free shopping days".

Figure 175. Computer graphic of the proposal - Source: Greater London Council

Figure 176. Computer graphic of the proposal - Source: Greater London Council

CAP: 11 | AP: 11

COPENHAGUEN (DENMARK)

Strøget

Figure 177. Route on aerial photo - Source: taller-arquitectura.com

Figure 178. Vimmelskaftet - Source: Leif Jørgensen

Strøget is one of the oldest and longest pedestrian streets in Europe and has had a great influence on similar schemes elsewhere. In actual fact, it is not a single street, but a collection of linking streets (Frederiksberggade, Gammel Torv / Nytorv, Nygade, Vimmelskaftet, Amagertorv and Østergade) within a broad central area of urban activity.

Its pedestrianisation in 1962 was of iconic importance and the scheme was widely imitated. From the 1950s, a number of streets in the centre were closed to traffic for a few days at Christmas to facilitate shopping and regulate the influx of visitors. In 1962, with almost no prior warning, the closure was extended, and the scheme gradually became irreversible, at a time when the supremacy of the automobile was largely unchallenged, and its associated problems were not as evident.

In October 1962, Copenhagen City Council decided to trial pedestrianisation of the Frederiksberggade segment from the City Hall (Rådhuspladsen) to Kongens Nytorv from 17 November. The scheme met with protests from local merchants and residents, but after two years the improvement in environmental quality was obvious, including a significant decrease in air pollution. In 1964, the change was made, and in subsequent years the pedestrian zone was gradually extended. The street, which is 12-15 metres in width, links several of the city's squares and sites of interest.

Figure 179. Vimmelskaftet - Source: Leif Jørgensen

VIENNA (AUSTRIA)

Graben / Kohlmarkt

The Graben, in the centre of modern Vienna, follows the southern limits of the original Roman settlement. In reality it is more an elongated square than a street and is unusual in offering no vistas. Regularised in the nineteenth century, the Graben supported large quantities of road traffic, although as both city centre and limit, it was always a major shopping zone and its key position made it an important urban concourse. With its irregular and asymmetric layout, traffic became concentrated in the southern area (closest to the new city and away from the site of the Roman/ medieval moat) leaving a wide footpath to the north housing important features such as the Plague Column (Pestsäule).

On 22 November 1974, coinciding with work on the U-Bahn and the proximity of the Christmas holidays, the Graben was pedestrianised—temporarily at first and then permanently— and once again became a market place, together with the adjoining Kohlmarkt. The subsequent pedestrianisation of central Vienna has grown gradually out of this initial action.

Figure 180. The Graben at Advent - Source: Wikipedia Commons

Figure 181. Kohlmarkt - Source: Wikimedia Commons: vnbn

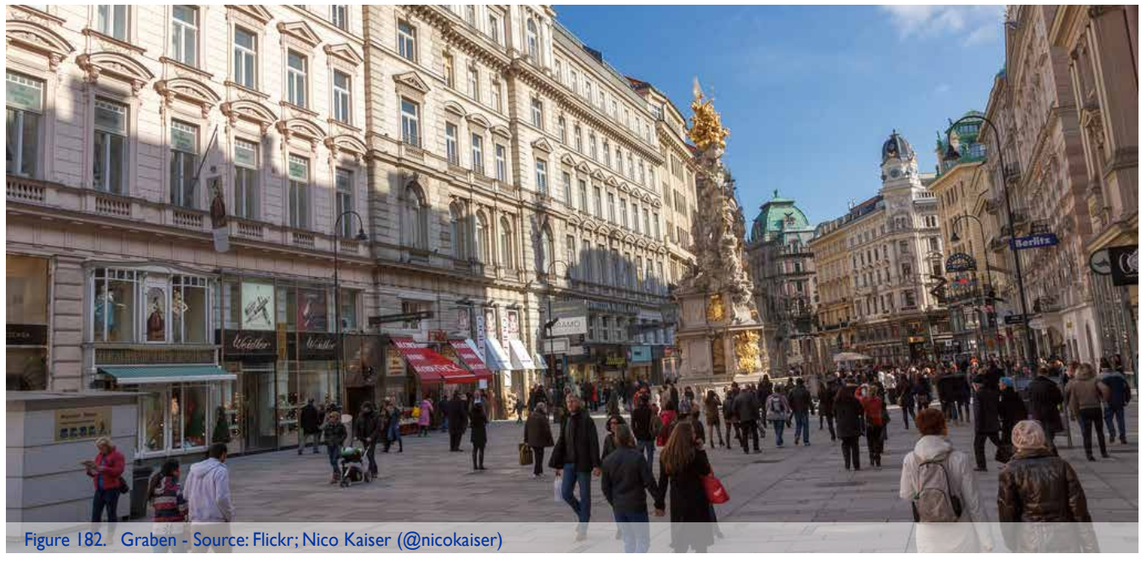


Figure 182. Graben - Source: Flickr; Nico Kaiser (@nicokaiser)

VIENNA (AUSTRIA)

Mariahilfer Straße

Figure 183. Pedestrian section - Source: Agencia APA

Figure 184. Bus Lane - Source: Wikimedia Commons: DJ3tausend

Figure 185. Model of the action - Source: BureauBB/orso.pitro

In April 2013, the Austrian traffic code was amended to recognise the concept of the Begegnungszone (literally "shared zone). This gave legal standing to the concept of pedestrian-priority roads and strengthened the concept of pedestrian streets with no private vehicles. These new roads had a shared space, with no difference in level between footpath and roadway, obliging vehicles to drive at very low speeds; no traffic signs and no visual pollution linked to traffic, apart from signs on entrance and exit from the area; and no parking, with only a small number of spaces where vehicles could halt for limited amounts of time for specific purposes, such as loading and unloading. Pedestrian priority does not mean that pedestrians can hinder or disrupt vehicular traffic.

Mariahilfer Straße, in the Sixth District (Mariahilf) of Vienna, is Austria's most important shopping street. Its runs along an irregular route from the Ring at the Museumsquartier to the Gürtel, Vienna's second ring road, through some quite varied areas. What makes this scheme interesting is that it involves a unified project with a complex solution. In different locations, the street has pedestrian sections and sections with different degrees of shared traffic.

The process of remodelling has also been interesting. Following an intense process of public participation and debate, a plebiscite was held among local residents. It was decided that in order for it to be considered binding, a minimum level of participation would be required. Over two thirds of those eligible to vote turned out on the day. Development of the first phase was completed in 2014, followed by a second phase in 2015.

A website now offers permanent information for local people, traders and visitors.

MOSCOW (RUSSIA)

Arbat Street/ Улица Арбат

Arbat was the first pedestrian street in the old Soviet Union. Once a major trade route, it is one of the few traces of the mediaeval city that still survives and it begins at the site of the former Arbat Gate, one of ten gates that ringed the old city, just a few blocks from the Kremlin. In the early 1980s, construction of the new Ministry of Defence building in Arbatskaia Square made it necessary to redesign the adjoining infrastructures, including redeveloping the streets and laying numerous installations under the street. For reasons of security and representation, it was decided to pedestrianise the street. Between completion of the work in 1986 and the final collapse of the USSR (i.e. the years of Perestroika) the street became a venue for street art and culture.

In the new Russia, Arbat is a shopping street that is showing clear signs of gentrification, with a boom in restaurants, western brand stores, offices and luxury homes.

Figure 186. Arbat Street - Source: NVO; Wikipedia Commons

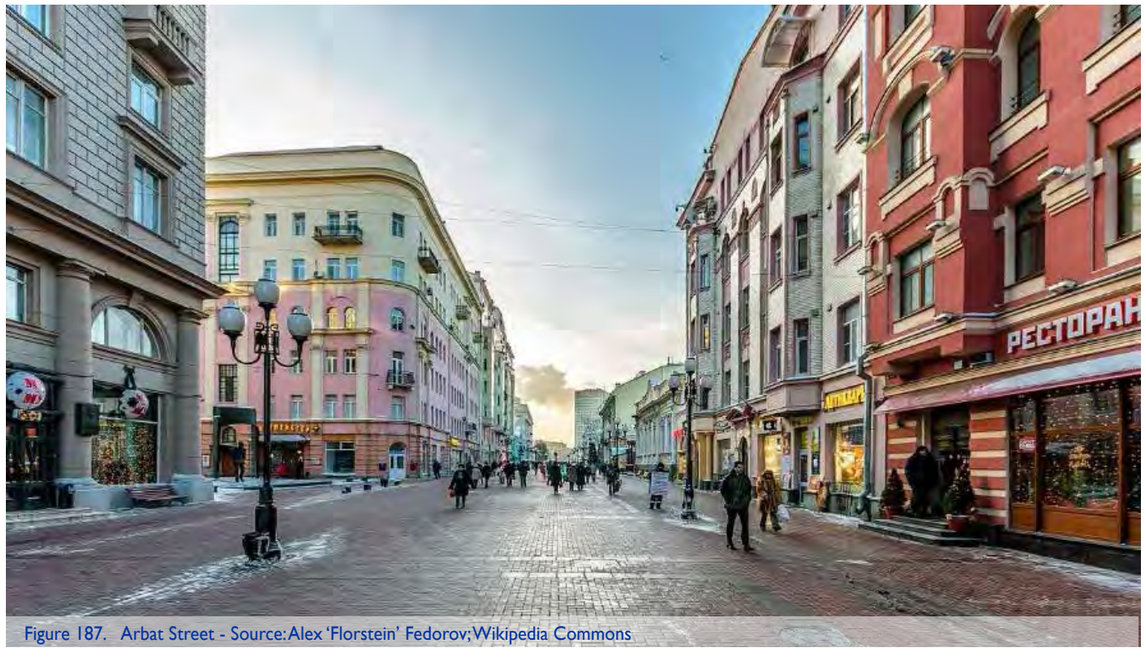


Figure 187. Arbat Street - Source: Alex 'Florstein' Fedorov; Wikipedia Commons

BERLIN (GERMANY)

Unter den Linden (planned)

Figure 188. Brandenburg Gate - Source: WCommons

Unter den Linden, the principal boulevard of Baroque Berlin is Germany's best-known street, running from the Brandenburg Gate to Museum Island (Museumsinsel). Pedestrianisation of the street is on its way to becoming a benchmark for similar schemes elsewhere. The street contains an almost unrivalled collection of businesses and buildings, including the UK and Russian embassies, hotels (e.g. the Adlon), Humboldt University, monuments such as the Neue Wache, museums, churches, theatres (the State Opera), etc.

In recent years, work on the U-Bahn has already reduced the flow of private vehicles on the street, and its permanent closure to traffic, due in 2019, is therefore unlikely to have any major impact on mobility.

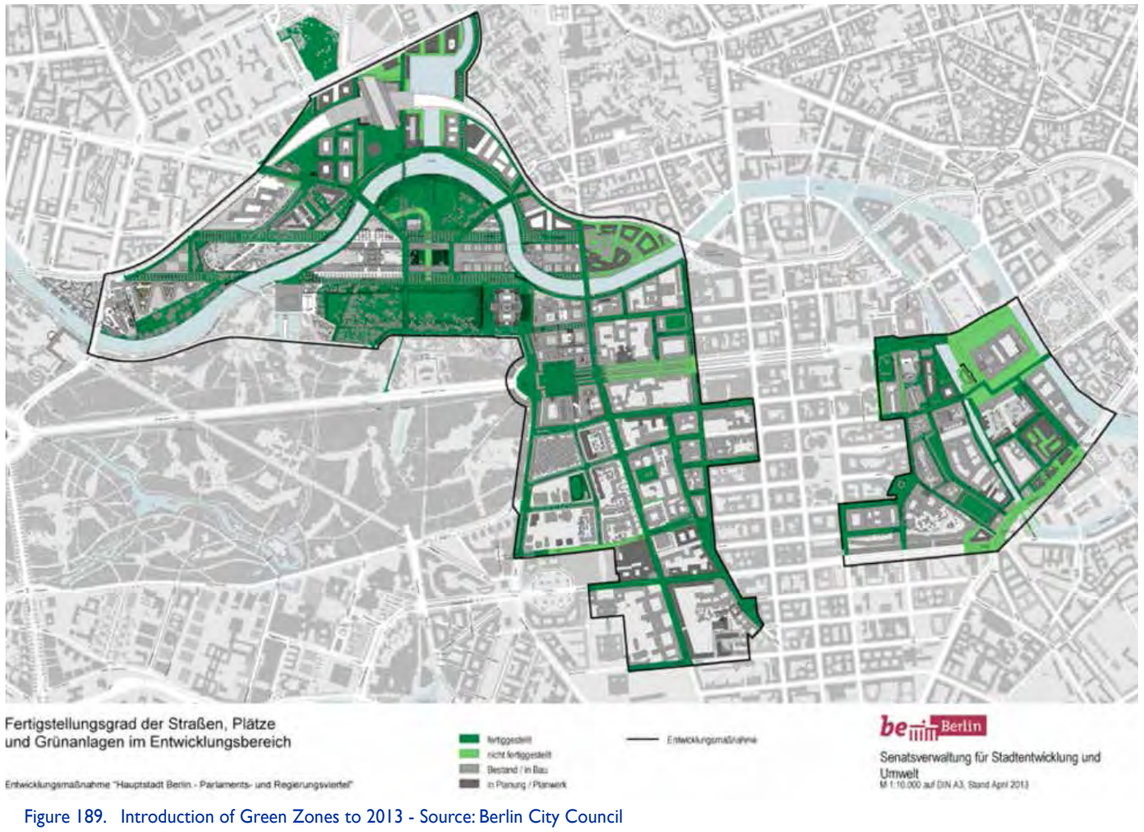


Figure 189. Introduction of Green Zones to 2013 - Source: Berlin City Council

CAP: 11 | AP: 16

HAMBURG (GERMANY)

Spitalstrasse

Pedestrianisation of the centre of Hamburg forms part of a wider local strategy involving the creation of a continuous green infrastructure. The idea is to eliminate a large percentage of private traffic by 2030, combining actions in the centre and suburbs of the city.

Figure 190. Spitalstrasse - Source: hamburg.de

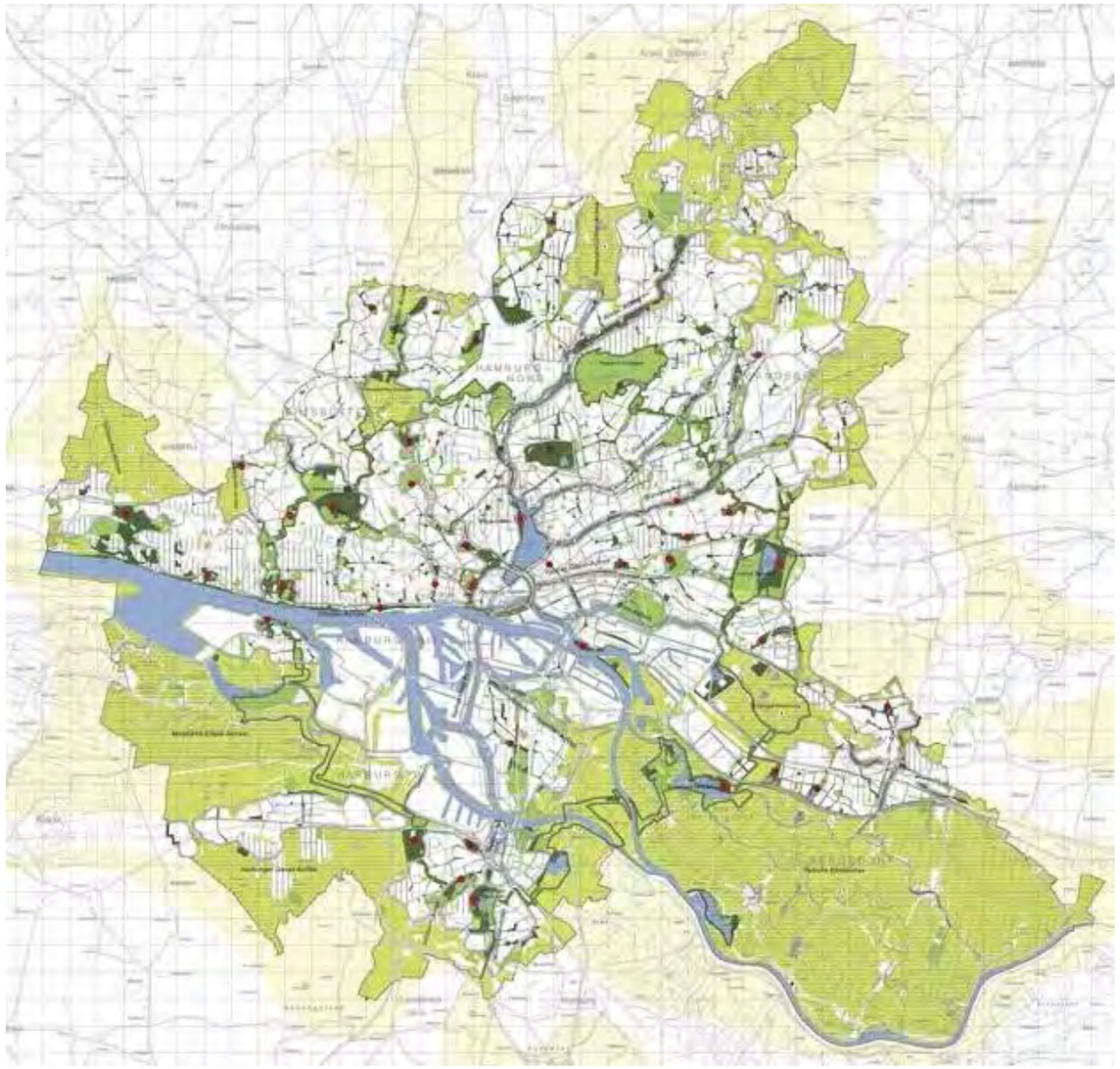


Figure 191. Hamburg pedestrianisation strategy. Plan - Source: Hamburg City Council

CAP: 11 | AP: 17

BIRMINGHAM (UNITED KINGDOM)

Paradise Project

Figure 192. Aerial view of Birmingham, 1921 - Source: paradisebirmingham.co.uk

Paradise is an urban regeneration project which is due to be executed by a public-private partnership. The costs of renovating the public space will be partly met by profits from the associated property developments.

It takes in a central space surrounded by high-capacity roads, and the project therefore also involves traffic restructuring. The most significant aspect in the scheme is the pedestrianisation of the Paradise Circus Queensway, which runs around the Town Hall from Great Charles Street.

This is an important regeneration operation in England's second-largest city, and the success of the public private partnership, participation of local actors and the results of the scheme will be monitored closely. The first phase of demolitions has already aroused protests against the predicted gentrification of the area. The city council has drawn up a long list of commitment, including new public spaces, remodelling of the road structure in the surrounding area and improvements to public transport.

Figure 193. Plan - Source: Paradise Circus Limited Partnership

CAP: 11 | AP: 18

NANTES (FRANCE)

Cours des 50 Otages

Much has been written about the series of transformations carried out in Nantes from 2005 under the mayoralty of Jean-Marc Ayrault, particularly his star project, the Île de Nantes. This focus has sometimes tended to eclipse more minor actions which can only be properly understood within the general framework of the ambitious transformation of the town, at the estuary of the River Loire.

An ambitious metropolitan plan, with radical changes to mobility—which now centres on a modern tramway—has transformed the centre, reclaiming space for pedestrians and bicycles by banning private vehicles and limiting the number of lanes, removing roadside parking and above all, by limiting access to the area during the central hours of the day.

In many ways, the complex rearrangement of the Cours des 50 Otages is exemplary both in its conception and design.

Figure 194. Prior to redesign - Source: Twitter: Stéphane Pajot

Figure 195. Condition in 2012 - Source: meilleureimage.eu

Figure 196. Remodelling work on the Cours des 50 Otages - Source: Llann Wé; Wikipedia Commons

CAP: 11 | AP: 19

ANGERS (FRANCE)

Plateau pietonnier and city centre area

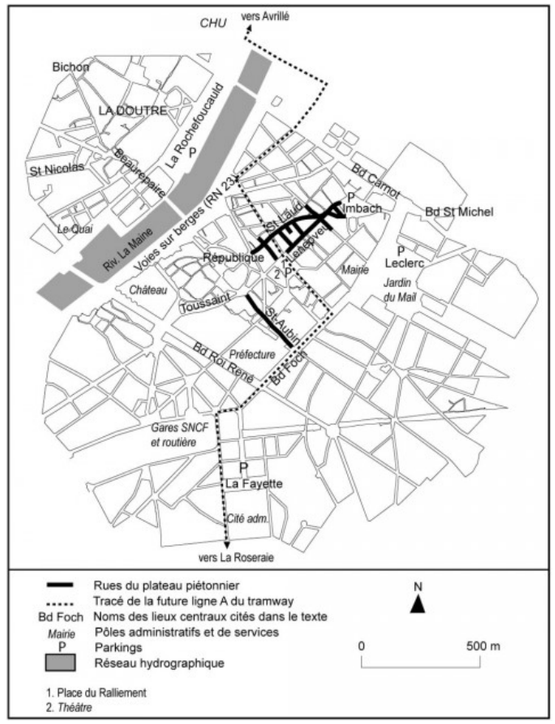


Figure 197. Location map - Source: Guillemot et Soumagne (2007)

Following installation of a tramway, the population of Angers voted to pedestrianise the heart of the city centre, limiting access by private vehicles to the plateau piétonnier to card-carrying residents and users of a private car park. The reduction in the space given over to private vehicles, in benefit of pedestrians, bicycles and the tramway, has greatly changed the image of the city.

The tram has proved to be fully compatible with pedestrian mobility, even over short distances.

Figure 198. Rue de la Roë - Source: Wikipedia Commons

Figure 199. Tram in the Place du Ralliement - Source: thegoodlifefrance.com

Figure 200. Pontevedra. Plaza de Curros Enríquez - Source: Luis Miguel Bugallo Sánchez; Wikipedia Commons

Figure 201. Panoramic view of the city of Malaga - Source: paolotrabattoni.it; Wikipedia Commons

Figure 202. The Ensanche area, Barcelona - Source: Shawn Leishman; Flickr (@shawnleishman)

The **centre of Pontevedra** is often considered to be one of the most outstanding examples of the transformation of the public space in Spain (File 1). Nonetheless, it should be noted that given the relatively small area involved, this operation was considerably less difficult than most of those analysed in the International Comparison section. In 2000, central Pontevedra had around 1,000 inhabitants (the pedestrianisation plan dates from 1997) and although the population was to double over the followed 10 years—undoubtedly one of the successes of the scheme—the challenge was modest compared to districts such as Ciutat Vella in Barcelona (population 105,000) or the Central District of Madrid (approximately 150,000).

However, the action in Pontevedra is of interest for a number of reasons. Firstly, because it initially only involved traffic restriction measures, with the material redesign of the spaces coming later. Secondly, because a number of different routes of different kinds were created: themed cultural routes, health routes, school paths, etc. And finally, because of the extensive work undertaken to publicise the changes, including the publication of maps and diagrams, such as the metrominuto, which helps pedestrians to calculate distances within the central area.

Malaga (file 2) is representative of a medium-sized city, half-way between a small provincial town such as Pontevedra and a major metropolis like Madrid or Barcelona. Malaga's central district is similar in size (5.87 km2) to Madrid's (5.23 km2), with a smaller population (83,456 inhabitants in 2012). However the area affected by the major transformations actually extended to the entire historical quarter, listed as a Cultural Interest Site in 2012, which is much larger (covering an area of 163 hectares) than the administrative division of the Central District (which covers just 48.28 hectares). The transformation has been progressive, centring on the immediate environs of some of the city's most iconic features (the Cathedral, Calle de Larios). The most far-reaching actions is the one due to be completed by 2017, which involves reducing the roadway in the Alameda and rerouting motor traffic to the sides, thus reclaiming the large central footpath area between the rows of trees as an urban living room.

Finally, the only other city in Spain of a comparable size to Madrid is **Barcelona** (File 3). The old city (Ciutat Vella) is somewhat smaller than Madrid's Central District in area (4.49 square kilometres), and with 105,000 inhabitants, its population density is also slightly lower. The urban fabric of the area, with its narrow streets, lends itself to pedestrianisation in all four of its quarters— El Gótico, El Raval, El Born (San Pedro, Santa Catalina and la Rivera) and La Barceloneta. Main pedestrian streets have been created in each of these quarters: Moncada in the Gothic quarter, the newly-created Rambla in Raval, the Passeig in Born and the more recent pedestrianisation of Calle Andrea Doria and Calle Maquinista in Barceloneta.

Figure 203. Historical centre of Pontevedra - Source: Concello de Pontevedra

Figure 204. Pedestrianisation of central Santiago - Source: Javier Ruiz Sánchez

PONTEVEDRA

Pedestrianisation of the Urban Centre

In 1997 the City Council of Pontevedra announced its plans to pedestrianise the historical town centre. In a city of little over 65,000 inhabitants, most required trips can be taken on foot in no more than twenty minutes. Moreover, a model based on private cars excludes a large number of people because of their age (children and elderly people) or social condition. Initially, pedestrianisation of the city centre simply involved restricting access to private vehicles and imposing speed limits. The redevelopment work came later.

The model encompasses a range of actions at different scales which together constitute a system of mobility prioritises pedestrians. The project has already been extended outside the medieval centre, and even, with the planned pedestrianisation of the medieval O Burgo bridge, outside the traditional city limits.

The scheme includes themed routes, health trails and school paths.

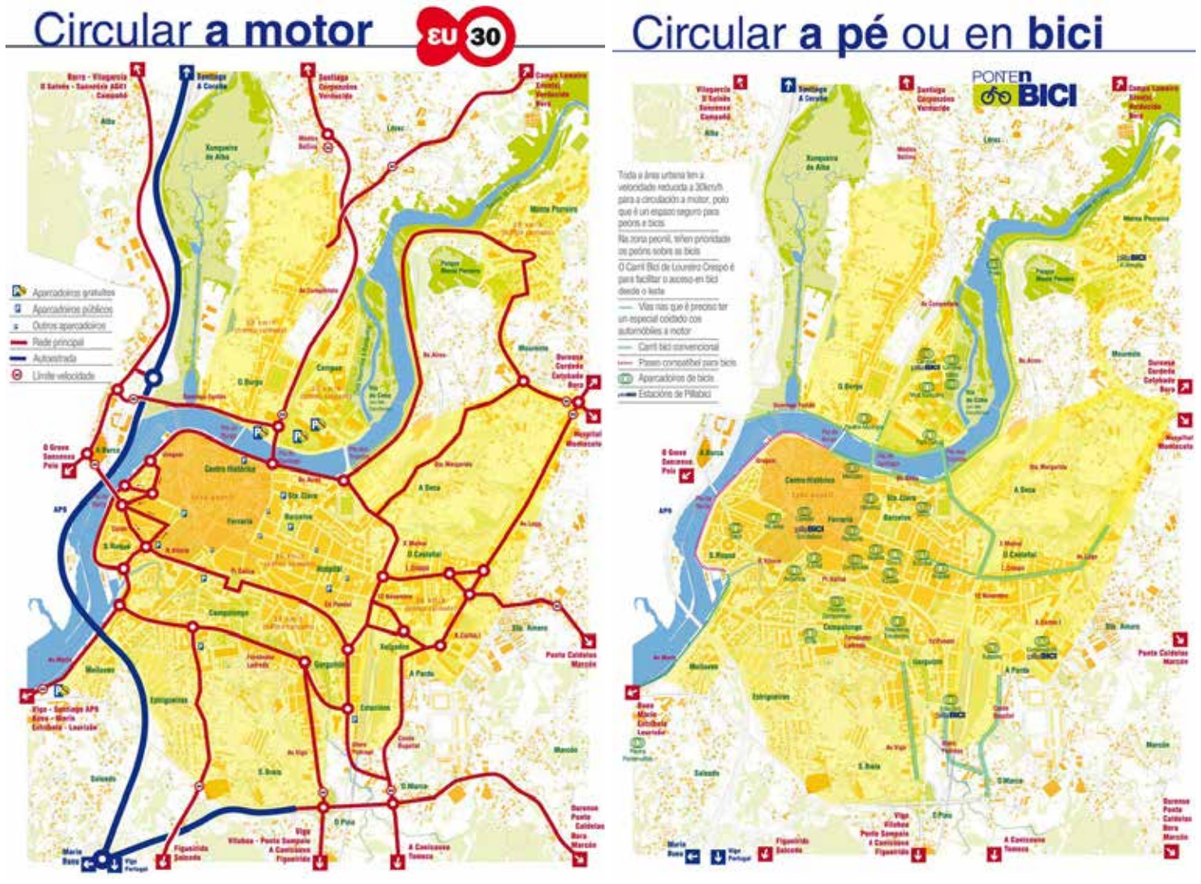


Figure 205. Mobility alternatives in Pontevedra - Source: Concello de Pontevedra

MÁLAGA

Pedestrianisation of the Urban Centre

In twenty years the area of pedestrian streets in Malaga has grown fivefold. Pedestrianisation has been linked to actions involving the cleaning of facades, refurbishment of buildings and the regeneration of urban areas, with Spanish and European public finance being used in a joint strategy involving boosting business in the centre and regenerating degraded neighbourhoods of the city.

In 2017 it was decided to undertake an ambitious redesign of the Plaza de la Alameda by increasing the pedestrian area, restricting road traffic to side lanes, and linking the historical promenade to the rest of the city.

Figure 206. Views of pedestrianisation of the centre of Malaga - - Source: OMAU

BARCELONA

Pedestrianisation of the Ciutat Vella District

Figure 207. Carrer des Agullers, pedestrianised - Source: Wikimedia Commons: Axelv

Figure 208. Environs of the Santa Caterina Market - Source: El Periódico

Figure 209. View of Ciutat Vella - Source: Felivet; Wikipedia Commons

Barcelona only city in Spain where the developments being undertaken are on a similar scale to Madrid. Their respective historic centres are also comparable in size, although Barcelona's old quarter (Ciutat Vella) is somewhat smaller in area than the Central District (4.49 square kilometres), and with around 105.000 inhabitants, it also has a slightly lower population density. The urban fabric of the area, with its narrow streets, lends itself to pedestrianisation in all four of its quarters— El Gótico, El Raval, El Born (San Pedro, Santa Catalina and la Rivera) and La Barceloneta.

Main pedestrian streets have been created in each of these quarters: Moncada in the Gothic quarter, the newly-created Rambla in Raval, the Passeig in Born and the more recent pedestrianisation of Calle Andrea Doria and Calle Maquinista in Barceloneta. They all roughly follow the same sloping gradient from the mountains to the sea, acting as parallel alternatives to the central axis of the Rambla. They are traversed by a large pedestrian route (Cathedral-Santa Caterina) and many smaller-scale developments have been undertaken between the different quarters, mainly on the Rambla and Calle Ferrá.

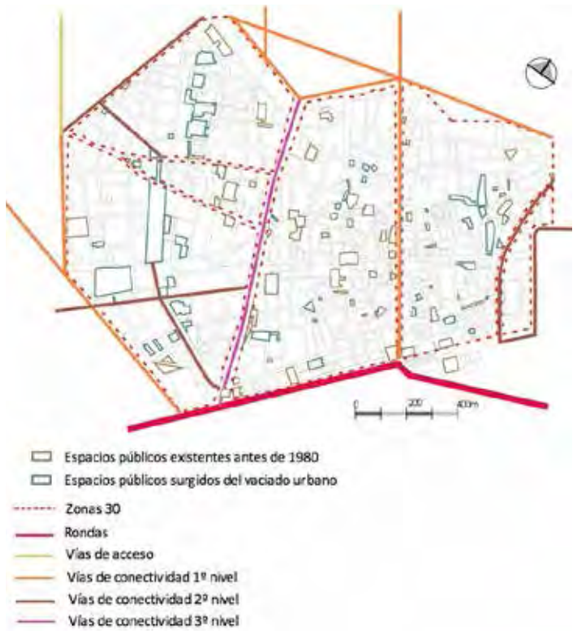


Figure 210. Map of routes - Ríos, M. (2009)

Figure 211. Madrid Central banners in the redesigned Gran Via - Source: Ayuntamiento de Madrid

SOME CONTINUING CHALLENGES TO URBAN MOBILITY IN THE CENTRAL DISTRICT

CAP: 13

Sonia de Gregorio Hurtado

In recent years, a large number of actions have been taken to tackle the issue of mobility in Madrid's Distrito Centro, many of which are discussed in previous sections of this study. They have sought to answer the need for change, particularly with a view to finding a way to combine recreational use of the space with the need for personal mobility and goods distribution and to resolve conflicts between the two. This 'coexistence', already made complex by the very nature of the urban area, with its many narrow streets, is further exacerbated by conflict between different modes of transport (pedestrians, bicycles and private, goods and public transport vehicles). The relationship between them has varied over the years, as different forms of usage have relocated and concentrated in different parts of the district. As well as more traditional means of transport, in recent years new personal mobility vehicles have appeared, including the segways used by tourists and the electric scooters that began to proliferate in the second half of 2018.

The general framework within which they all share space in the district has seen a profound transformation since the end of November 2018, when the test period for the Madrid Central scheme began. The measure forms part of the City Council's Plan A for Air Quality and Climate Change (2017), specifically the action referred to in the plan as the "Zero Emissions Central Area", also known as Madrid Central. The purpose of this scheme is to reduce atmospheric pollution in the historical centre while at the same time cutting the use of private cars with their attendant negative effects and incentivising the use of public transport and active means of transport. The action also seeks to impact other sources of pollution "with the principal goal of establishing an emissions-free zone in the city" (Ayuntamiento de Madrid, 2017: 78). The first measure has been to eliminate through traffic within an area bounded by the rondas and boulevards. Only residents, people with reduced mobility, emergency services and certain types of vehicle (those with zero emissions environmental labels and ECO labels) can be driven in the area. Given how recently the measure was introduced, no data is yet available on the reduction in greenhouse gas emissions and suspended particulates. However, some of the qualitative effects were obvious from the very first day. The most noticeable has been the drop in the number of private vehicles using the public space (being driven and to a lesser extent parked), resulting in an improvement in the quality of the space from many points of view. The action is having a major regenerative capacity on mobility in the city: the way in which vehicles and people get about can affect the public space and lead to social, environmental and economic change. Given the changes it has brought about, it is safe to say that introduction of the Madrid Central scheme not only marks a major step towards reducing pollution and mitigating climate change, it also goes some way towards meeting some of the remaining challenges to mobility in the district. A systematic look at improved mobility in the area, with a view to valorising and extending the benefits of Madrid Central, might also prove transformative.

Some of the most important challenges to mobility in the Distrito Centro relate to the necessity to cater to the everyday travelling requirements of different social groups, taking into account the spatial and planning characteristics of the area. The aim is to develop an approach which does not focus solely on compulsory mobility. According to the council's statistics, 22% of the 132,352 residents of the Distrito Centro (at 1

January 2018) were aged over 65 years and 8.48% were under 15. The two groups, elderly people and children, largely lead their everyday lives within their own neighbourhoods, making use of local services and amenities and mostly moving between them and their homes on foot. This is a key factor for many different aspects linked to urban policy, particularly one area which has not received sufficient attention in Madrid. This is the importance of pedestrian mobility in enabling elderly people to continue living at home in their own neighbourhoods, even when they begin to experience minor health problems. A city that tends to this aspect will allow elderly people to be independent for the longest possible time. To achieve this goal, however, there are a number of conditions that must be met by the public space, and footpaths in particular. In recent years, some of these aspects have been addressed in the Distrito Centro. For example, in a large proportion of the road network universal accessibility has been assured (particularly by levelling footpaths and pedestrian crossings and repaving footpaths in poor condition), new crossings have been added, and the ratio of footpath to roadway and parking area has been improved. In many cases, narrow footpaths have been widened. Public toilets are currently being installed in some central sites too. These amenities are especially important in the drive to encourage elderly people to walk (and in general to incentivise their presence in the public space).

However, although important steps have been taken in the right direction, some problems persist: in some streets, the footpaths are so narrow as to only allow one person to pass at a time, and in the evening and night-time they are often taken up by refuse containers. This issue can be a serious problem for elderly people and some other groups (e.g. people with motor or visual disabilities, parents with pushchairs, people who need to walk on another's arm, etc.).

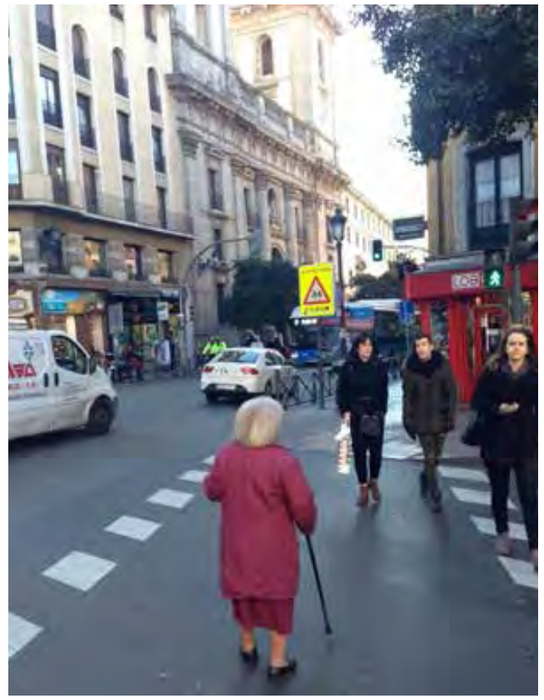
Figure 212. Widening of footpaths - Source: Sonia de Gregorio Hurtado

Other aspects that still need to be addressed include improving the paving in some streets, providing hand rails in some sections of stairs, and adapting the cycles of traffic lights, which often do not stay green for long enough to give slow walkers time to cross.

Not enough attention has been paid to the installation of benches in the public space at frequent enough intervals to allow elderly people, and others with mobility needs, to halt regularly. Installing benches not only encourages elderly people to walk further; it also helps to identify the public space as a place to stay in.

In short, a systematic look needs to be taken at pedestrian mobility in the public space within the district, with a view to providing a network of safe, pedestrian-friendly routes, fitted with appropriate street furniture,

and with easy access to public transport. As already mentioned, the central district is home to a large number of elderly people, and if demographic forecasts are anything to go by, the increase is likely to continue. Incentivising pedestrian mobility among this group to make them as independent as possible for as long as possible, is a challenge not only for the present, but even more so for the future. Taking steps to address this matter will ready Madrid to be a more resilient city.



All of these issues are in turn related to another challenge: the importance of incentivising active forms of mobility (walking and cycling) to prevent the health problems associated with a sedentary lifestyle. A report by the ISCA (The Economic Cost of Physical Inactivity in Europe, ISCA, 2015) finds that across Europe, inactivity's contribution to all-cause mortality amounts to over 500,000 deaths per year. These could be averted by encouraging citizens to engage in lifestyles that achieve the recommended levels of physical activity. This issue is of key importance at all ages, but particularly in the more advanced stages of life since, as well as its physical benefits, walking also contributes to mental health.

The Distrito Centro has all the features needed in the urban environment to promote the notion of the "close-at-hand city", i.e. a city which has public and private amenities, parks and gardens, services and retail outlets, all within reasonable reach of homes, allowing residents (if they so wish) to go about their everyday lives within their neighbourhood, getting about on foot or by bike. As already discussed, this vision plays a very important role in the pedestrian mobility of elderly people, but also of children, people with disabilities, and people looking after a dependent relative (most of whom are women). Viewing mobility in these terms will enable us to

Figure 213. Public space unsuited for elderly residents - Source: Sonia de Gregorio Hurtado

respond to most of the everyday travelling needs of these groups, while at the same time offering benefits in the mobility of the citizenry as a whole.

In addition, having a public space that incentivises pedestrian mobility is one of the most important factors in encouraging a shift from private to public transport. Most trips by public transport require some walking at the beginning and end of the journey. If attractive pedestrian routes are provided, and —in addition to the issues already discussed— attention is given to aspects such as security and thermal comfort (e.g. by providing tree-lined routes that provide shade in summer and let the sun through in winter), it may encourage people who might otherwise not consider this option to walk to public transport. To implement this vision effectively, as well transforming the public space, it is also necessary to launch information and awareness-raising campaigns, targeted particularly at people who use their own private vehicles to get about.

More progress is also required to improve bicycle mobility. The introduction of the BiciMad scheme and measures designed to allow bicycles and other means of transport to share the roadway, have opened up an important space for this mode of transport. Further steps need to be taken to consolidate use of bicycles for required trips. Here it would be useful to look at the options for co-modality between bicycles and other means of transport and find ways of promoting it (e.g. by installing bike parks close to metro and suburban rail stations in the district, running information and awareness-raising campaigns, etc.).

Any progress with regard to all of these issues must take into account the view of citizens and their associations. Therefore, in any future steps to be taken, the contributions they can make through the Public space and Mobility Committee of the Local Forum of Distrito Centro, and through other participation mechanisms, will be essential.

Figure 214. Adaptation of paving to single platform and tree planting in Chueca neighbourhood - Source: Ayuntamiento de Madrid

Figure 215. Plaza Mayor with temporary lawn - Source: Ayuntamiento de Madrid

CONCLUSIONS

Over the second half of the twentieth century and the beginning of the twenty-first, many operations have been undertaken in central Madrid, which—for better or worse—have profoundly transformed the public space. The speed at which society was motorised during the period of so-called "Desarrollismo" (the intense development of the 1960s), when automobiles were associated with modernisation, resulted in a series of public actions intended to adapt the city to the vehicle, rather than the other way around. In many cases, this involved putting strain on the physical conditions of the consolidated urban fabric and ignored the potential environmental and social impact. Although in Distrito Centro we have not seen the imposition of major road infrastructures in operations involving tearing apart the fabric of the area, this does not mean that such plans did not exist. As early as the 1970s, some consideration was given to the idea of building a so-called diagonal Gran Via between Plaza de España and Plaza de Alonso Martínez. Even that scheme would have entailed creating a more or less conventional street, rather than elevated highways in the style of American "urban renewal" operations, such as the Lower Manhattan Expressway proposed by Robert Moses for New York. Nonetheless, several of the projects that were implemented—such as the creation of the underground car parks beneath Plaza Mayor, Plaza de las Descalzas and Plaza de San Martín, and the "Scalextric" in Atocha—would today be considered unfeasible. Even the 1990s redesign of the Plaza de Oriente would probably be unimaginable now.

Today, the paradigm has been turned on its head, and the predominance of more sustainable—and preferably non-motorized—modes of transport (in order: pedestrian, bicycle, public transport) is now—in theory at least—a sine qua non of town planning. In practise, however, the actual construction of free spaces may stray from this standard. Yet despite a certain resistance to change, linked particularly to the relative importance of the building industry in the national economy (particularly in public works), there is an undoubted shift towards reclaiming spaces for pedestrians and cyclists. The emphasis is no longer on bringing the automobile to every last corner of the city (and preferably, to the very door of people's homes) but of ensuring certain minimum levels of accessibility (for emergencies, people with reduced mobility, loading and unloading, etc.), and allow different modes of transport to operate alongside one another by adapting them to the existing space. This is well illustrated by some significant examples both abroad (Copenhagen) and in Spain (Pontevedra). This means reducing the entirely oversized space provided to motor vehicles, including both the driving area on the roadway and (especially) the space for parking. Not all of these operations, therefore, involve complete pedestrianisation; most are mixed actions, with traffic restricted to certain sections or to residents only.

Figure 216. Palacio Real - Source: Authors

It comes as some surprise to see that many of these criteria have been applied as part of larger public space transformation schemes, as such as those linked to the Refurbishment Areas. In the Dos de Mayo, Huertas, Lavapiés and Pez-Luna projects, the space for private vehicles has been significantly reduced, by making traffic lanes narrower and above all, by removing ground-level parking spaces—only sometimes partially offset by the creation of underground car parks. What is surprising is that this criterion is not explicitly stated in the projects in question (although as recently as 1993 it was clearly listed as one of the mobility criteria in the preliminary draft of the review of the General Planning Scheme for Madrid. In many cases, because the change has taken almost covertly, no figures have been published on the number of parking spaces eliminated. This is probably because such statistics were considered to be "sensitive material" which might fuel protests from local people. Nonetheless, in the case of the schemes mentioned above, the move may generally (with some exceptions) be considered to have been successful in terms of the redevelopment of the public space.

A specific analysis is also required of the way the issue of urban vegetation has been tackled. As a historical quarter, Distrito Centro has very few free planted spaces. Indeed, most of the open spaces that do exist (generally squares/places), were created in the nineteenth century following the demolition of religious buildings (Plaza de Santa Ana, Plaza de Santo Domingo) or military facilities (the Monteleón Barracks), and there is therefore little vegetation of any great age. To make matters worse, the area under many of these squares has been used for underground car parks, further limiting the possibilities for planting.

Nonetheless, the "reintroduction" (or in most cases, the first-time introduction) of trees and other vegetation has progressed with varying degrees of success and as López de Lucio (1999) has said, offers a "new visual, environmental and climatic quality for the neighbourhoods of the consolidated city". Here, mentioned should be made of the theoretical work of Martínez Sarandeses, Herrero Molino and Medina Muro (1999, 1990) especially their analysis of the problems involved in application and their design recommendations, albeit they are often not sufficiently adhered to. At the end of the noughties, that overall trend was abruptly turned on its head in a number of projects for public squares — Plaza de Santa María Soledad Torres Acosta, Plaza del Callao and Puerta del Sol—where all semblance of vegetation was practically done away with in favour of very hard, almost exclusively stone-based, arrangements.

There has since been an explicit attempt to reverse this trend, and the Environment and Mobility Government Area is drafting a Strategy Plan for Green Zones, Trees and Biodiversity in the City of Madrid (SPFZTB), which includes an exhaustive analysis and classification of all the green zones in each district. It also contains an itemised catalogue of trees, which includes, for example, an analysis of coverage. The analysis phase, which will begin with the Central District, is due to be presented at the end of 2017. The SPFZTB will be of particular interest for its analysis of roadside trees and should enable green axes across the city to be identified.

The issue of street furniture—also the responsibility of the Area for Environment and Mobility—is also important. In general, the way the street furniture installed in the district has been designed has been highly

defective. This is even true in the case of newer actions (Calle del Arenal, Calle de la Montera, Calle de Fuencarral), where there is a significant shortage of benches that might enable these spaces to be viewed as places for staying, and not simply walking through, often on the pretext that this discourages the large-scale influx of homeless people. At the same time, new provisions of street furniture are to a great extent limited by the catalogue of authorised elements, which are generally of little quality.

To all intents and purposes, the new operations currently being underway will complete the actions of the last 30 years throughout most of the district—or at least in its larger streets. Actions still remain to be undertaken on Calle de San Bernardo, Calle de la Hortaleza and Calle de Toledo. These will necessarily have to start after implementation of the RPA throughout the district.

This last measure is the culmination of the major progress of the last decade due to progressive implementation of RPAs, which has taken the pressure off physical actions involving reducing ground-level parking spaces. Nonetheless, Distrito Centro on its own has only limited capacity to influence overall mobility in the city. Relevant measures are required at source, and at the main accesses (actions are currently being studied for Paseo de Santa María de la Cabeza and Paseo de Extremadura, the urban extensions of the A-42 and A-5 respectively)

Finally, it is worth noting that for the first time "soft" or tactical urban planning solutions are being tried out (in Calle de San Vicente Ferrer, Calle del Tribulete, and outside the Central District, in Plaza de Chamberí), an approach that has really taken off in other countries.

Based on the Spanish and international experiences analysed, a number of conclusions may be drawn. And although these are also discussed elsewhere in this text, a brief summary of the main recommendations may be helpful here:

- The advisability of introducing pedestrian traffic counters (like those installed in Melbourne, Hamburg and Berlin) and measurements of sustainable modes of transport in general (the most recent mobility survey by the Community of Madrid was carried out in 2004) as an essential way of diagnosing and monitoring the impact of the operations carried out. Here it might be possible to make use of direct management of BiciMad to extrapolate conclusions for a thorough analysis of its development and performance,

- Combined action with reserved-platform systems: tramway (Nantes, Angers, Melbourne) or BRT (Bogotá, Santiago), using infrastructure works as a transition period (Berlin, Vienna) to limit the negative impact of adaptation on the population. This might be of interest in the future operation on the Gran Via, or the operations on Paseo de Extremadura and Paseo de Santa María de la Cabeza

- The advisability of introducing larger numbers of "low cost" actions (New York, Pontevedra), with no major financial outlay (street markings, furniture, parklets, signalling, etc.), which also have the advantage of being reversible or incrementable. In Madrid, such schemes have so far been only tested out on a pioneering basis.

- The need for complementary information campaigns (London, Pontevedra), including the publication of guides and maps, information panels, web information, etc. The creation of a new municipal radio channel, M21 will help publicise this type of initiative

- The need for an incrementally-oriented approach (Copenhagen, Santiago, Melbourne). This involves setting certain medium- and long-term targets, within which the actions can be implemented successively, according to the funds available. This approach is especially useful in a context in which investment capacity is limited by borrowing and nationwide fiscal policies. It requires adhering to a base document—or in this case two documents, the Strategy for the Creation of a Network of Pedestrian Routes in the "Central Almond" of Madrid and the Master Plan for Cycle Mobility. This will call for joint internal circulation of the two documents among the different institutional agents to prevent mis-coordination. These documents can be both implementable and correctable (indeed the MPCM has already undergone review and updating), and new actions added as seen fit.

Figure 217. Opening of the Arquitecto Ribera park - Source: Ayuntamiento de Madrid

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