

Processes and planning of peri-urban landscapes in Spanish cities

The role of Urban Planning, Environmental Planning and Landscape

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Abstract

The phenomenon of suburbanisation is as old as cities themselves, as urban history shows. However, the ways in which cities have colonised new spaces have changed over the course of time. Contemporary urban landscapes show a widespread decentralisation of tertiary activities, whereas the industrial era witnessed the exponential growth of residential and industrial peripheries. The spread of various infrastructures, particularly roads and rail, has contributed to the formation of what is now commonly called “new peripheries” or “peri-urban zones.” Existing in a transitional state between the purely rural and the urban, these areas have a distinct character. The paper seeks to identify and evaluate strategies implemented in six Spanish cities in recent decades, with a view to highlighting their importance in requalifying, preserving, or revitalising heritage and eco-cultural values within twelve case studies. The analysis relies on the identification of risks and opportunities for the 12 areas studied, which were derived from a previous study. We have analysed the transformation of these areas over the last 50 years (1970-2020) from different perspectives: land use, urbanisation processes, changes in the road and rail systems, use of buildings, green and blue infrastructures, etc. This is followed by a critical examination of the existing and emerging urban planning and landscape strategies and instruments in the cities under study, particularly concerning the selected areas. The study shows that the proliferation of planning instruments alone does not guarantee the conservation or revitalisation of these peri-urban landscapes. We focus on those strategies that seek to maintain and enhance environmental and landscape quality. Open space management, sectoral policies, comprehensive interventions such as soft infrastructure, river parks or green corridors have also been analysed in landscape plans and projects. The aim is also to identify the most effective ones, which can help guide future interventions.

Keywords

peri-urban landscapes, eco-cultural values, Blue and Green infrastructures, spatial plans, landscape projects

How to cite

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INTRODUCTION

The phenomenon of suburbanisation, as urban history has shown, is as old as cities themselves. The way in which cities have colonised new spaces, however, has changed over time. While the industrial era saw the exponential growth of residential and industrial peripheries, in today's city the widespread decentralisation of tertiary activities and the proliferation of infrastructures of all kinds, especially roads and railways, have led to the configuration of 'new peripheries' or 'peri-urban areas'. Peri-urban areas have a very different nature, being a kind of transition from the strictly rural to the urban¹. This concept has been the subject of research in several studies and European projects². Overall, according to various studies, periurban processes should not be identified with 'suburbanization'³. These peri-urban landscapes are not simple visual scenarios, but the manifestation of processes that shape the territory and territorial systems, the so-called peri-urban landscapes analysed by some urban geographers⁴.

Over the last few decades, there has been a real 'peri-urban explosion', which is part of the more general phenomenon of the emergence of 'urbanised landscapes'⁵. New urban growth processes are reshaping the peripheries, turning the surrounding natural and agricultural spaces into a palimpsest⁶, a collage of often fragmented, dispersed, empty or residual spaces with mixed uses. The damage to the natural environment, the destruction of agricultural land and the increasing trivialisation of the peri-urban landscape are well-known problems. In short, spaces that are no longer fully urban or rural are becoming increasingly degraded. However, the cultural and environmental values of these landscapes, i.e. the eco-cultural values of the new urban and territorial systems, are receiving increasing attention as a response to these dynamics. The European Landscape Convention (ELC) has taken a decisive step when drawing attention "both to landscapes that can be considered exceptional and to ordinary or degraded landscapes". This implies the recognition of the value of "ordinary landscapes" and not only of those with exceptional heritage value. Considering that every territory is a landscape regardless of its quality and the appreciation it deserves is an innovative idea that have led to re-evaluate the importance of peri-urban landscapes and to consider them as an opportunity for the design and implementation of innovative models for the regeneration of cities and landscapes⁷.

PERI-URBAN EXPLOSION IN EUROPEAN CITIES: URBAN AND ENVIRONMENTAL STRATEGIES

Several approaches to these issues can be found in the fields of urban geography and planning history. Geographers have studied peri-urbanization, particularly in France, which is a meaningful example of what is happening in continental Europe, where these processes have been accelerating since the 1970s⁸. Planning historians have revisited the visions and experiences of the urban planning tradition with a broad perspective, focusing on the treatment of the relationships between urban processes and the rural environment. Conceptualisations

and experiences that address the implications of planning for the sustainability of productive urban landscapes are often marginalised, despite the wealth of literature on the renewed history of urbanism or planning history. However, there is a wide field of proposals in which it is possible to find elements that are fully valid and that connect with current formulations and strategies, often unconsciously and without considering their precedents. Beside this, other studies focus on specific planning issues, such as the book, edited by Marco Amati, *Urban Green Belts in the Twenty-first Century*⁹. It addresses this complex issue from different perspectives – landowners, regulation, evolution from Green Belts to Green Networks, Green Wedges, flexible Green Belts – and in different cities, from Viena to Berlin, to Tokio, to Paris, to Seoul, to Ottawa... (Figure 1).

The Green Belt is probably one of the most successful concepts in international urban and landscape culture. Its initial objective was to control suburban sprawl by means of strips or belts free of buildings. But they are also understood as a variant of the park systems that are being developed, above all, in North American cities. In addition to the connections with the garden city movement, Green Belts emerged strongly in the middle of the 20th century, at the same time as functionalist urbanism, in correspondence with the idea of strict segregation of uses that forms part of the modern paradigm. The international popularity of Green Belts is largely due to their successful implementation through the London Plan of 1944, which was widely disseminated throughout the world and became a paradigmatic case and an urban planning model. In the urban plans of many cities, Green Belts have been used to preserve open spaces for agriculture, forests, or nature reserves in the immediate vicinity of the city.



Fig. 1. Suburbia and peri-urbanisation. The Green Belt as a strategy for containing suburban sprawl. Some planning history and geographical approaches.

In recent years, the models of Green Belts and conventional park systems have been replaced by other more sophisticated concepts, based on strategies for connecting green corridors and all kinds of elements of natural and landscape value that make it possible to link and integrate rural or forested areas with urban areas. Green Belts have become open space systems within ecological visions that are increasingly important in regional planning, rather than just measures to contain urban growth. Therefore, the new concept of ‘Green Infrastructure’ is not a new idea at all. While earlier strategies proposed Green Belts as a tool to contain urban growth, recent strategies have become more complex, focusing on green corridors (from open space systems to green infrastructure), regional parks (agricultural parks, forests), watercourse restoration (rivers, irrigation canals), cultural landscapes (protection and restoration of natural, eco-cultural and heritage values) or small-scale interventions in hybrid peri-urban areas (links, routes, edge stitching)¹⁰.

Today’s priorities are the management of natural or semi-natural areas with complex functions in the urban ecosystem, including blue spaces, which attach particular importance to the water cycle and therefore include river and coastal systems. The initial defensive strategies, based on restrictive zoning, are being transformed into more inclusive or mixed ones, with the aim of promoting a model change towards a low-carbon and more efficient economy, investing in the natural capital that has been mistreated during decades of relatively planned urban growth¹¹.

This is in line with what Peter Hall used to say about how in the planning culture there are few ideas that are constantly recycled¹². There are many diagrams that explain the sought-after relationship between cities and the countryside. From Ebenezer Howard to Patrick Geddes and many others to Cedric Price, there are many graphs that try to express the desire for connection and integration between nature and the city. In contrast, other authors draw attention to the evolution and sophistication of concepts, reflecting on the evolution from Urban Planning Culture to Ecological Landscape Urbanism, from Park Systems and Green Belts to Green Infrastructures, etc¹³ (Figure 2).

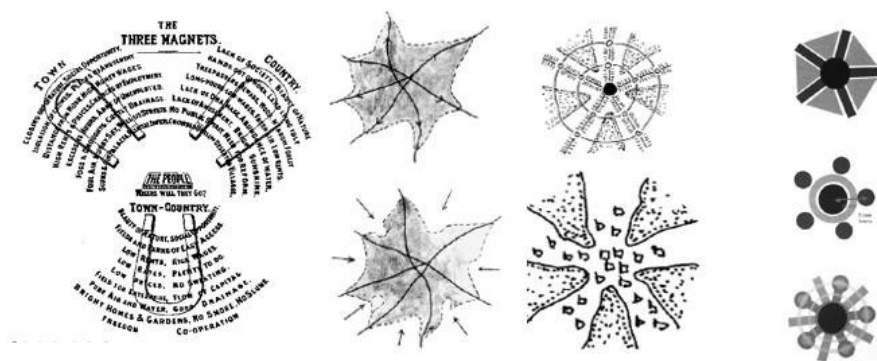


Fig. 2. Nature/urban balance. Left, diagrams by Ebenezer Howard, Patrick Geddes and Kevin Lynch. Right, three models: ‘the finger plan’, ‘the polycentric metropolis’, ‘the mix’.

When it comes to the main traditions of the Green Belt, the English and German cities are undoubtedly an undeniable reference. In English cities, there is a remarkable continuity in the way urban management tools are conceived and applied in Green Belts¹⁴. A paradigmatic example is the West Midlands Green Belt (WMGB), one of the 13 existing in England (plus the 10 in Scotland), approved in 1976. Birmingham's Green Belt is part of this much larger belt which surrounds the West Midlands and the Coventry conurbation¹⁵. It is worth remembering that it is no longer just an empty and protected space, but allows a range of uses under strict control, with a third of the area dedicated to intensive agricultural use. Although it is an urban strip, the boundaries of the Green Belt are recognisable and are formed by road systems and characteristic features such as rivers and watercourses. As with other Green Belts, the objectives are to control urban sprawl, prevent the merging of surrounding settlements, protect rural areas from encroachment by other uses, preserve the character of historic settlements and contribute to urban regeneration, and encourage the recycling of brownfield and other urban land¹⁶. Even new slogans, such as the so-called 'All London Green Grid', cannot hide the obvious continuity with the Green Belts¹⁷.

The case of Hamburg is probably one of the most significant and exemplary among European cities in terms of the treatment of open spaces, both in the consolidated city and in the peripheries and peri-urban areas¹⁸. There is a strong continuity with initiatives already developed in the first decades of the 20th century. Thus, in Fritz Schumacher's plans in the inter-war years, an ambitious and coherent system of axes, wedges and green corridors was proposed. The initial scheme focused on the banks of the Elbe and its tributaries, with radial wedges converging on the city centre. This plan has remained in place and has continued to be implemented with few changes for decades. The Hamburg Plan of 1947 and the so-called Reconstruction plans of 1950 and 1960 placed great value on green spaces and their connections by combining radial and circular green corridors, which was taken up in the plans for Hamburg and its surroundings in the early 1970s¹⁹. In the Grünes Netz Hamburg (Hamburg Green Network) several systems are superimposed: the first Green Belt on the former city walls and the second Green Belt connecting an approximately 8 km long park system, which was to be preserved for agricultural and recreational, now also ecological, uses²⁰. Other German cities show similar continuity and innovation in this urban planning and environmental strategies, among them the Natur Netz Munchen or the Stuttgart U Green.

The Green Belt of the Spanish city of Vitoria, an authentic and nationally recognised urban and landscape model, stands out in this European context. In this medium-size city (with about 250,000 inhabitants) the City Council developed at the beginning of the 1990s a series of actions in the peri-urban area to improve the environment of its outskirts. Over the decades, these actions have become a belt that defines and characterises the city of Vitoria itself. The result is a Green Belt made up of several main parks, linked by a series of connecting elements and spaces, ranging from tree-lined hedges to stretches of riverbank. This Green Belt is an example of urban and peri-urban intervention for the conservation and enhancement of biodiversity, eco-efficiency and resource conservation, landscape adaptation or functionality for public use, achieved over 30 years through specific interventions ranging from environmental regeneration to the promotion of rental gardens or the creation of interpretation centres. This municipal project has given the city of Vitoria a social, environmental, and economic boost, becoming Green European Capital in 2012²¹ (Figure 3).

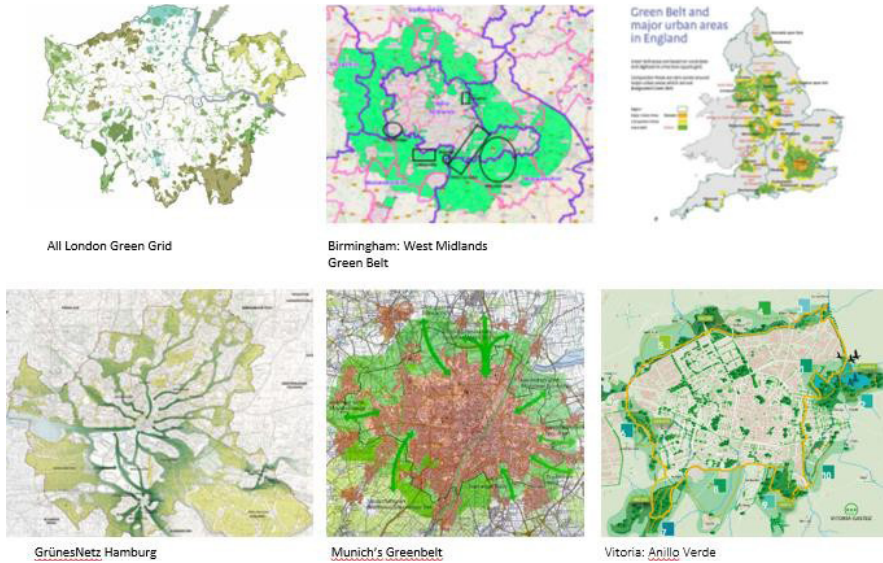


Fig. 3. Green Belts, Green Corridors, Green Networks, Green Infrastructures: London, Birmingham, Hamburg, Munich, Vitoria.

PLANNING AND PERI-URBANIZATION IN SIX SPANISH CITIES

In Spain, over the last few decades, with the expansive urban growth cycles that began in the 1970s and accelerated in the late 1990s until the real estate bubble burst in 2008, peri-urban areas have been heavily occupied. There are several indicators that show this kind of explosion through different tools such as mapping, flights or statistics. One of the most expressive methods to account for the process of land occupation is an analysis of night-time luminosity and its growth over the last decades²². The risks of degradation of these spaces are particularly evident in Spanish cities, where urban development policies do not provide an adequate level of protection for that peri-urban areas in which both urban and rural uses coexist.

Our research, developed in the frame of the project PER-START, focuses on the processes of peri-urbanisation that are being experimented in Spanish cities²³. The aim is to identify and evaluate the strategies that have been implemented over the last few decades in 12 case studies in 6 Spanish cities, with a view to highlighting their importance in the re-qualification, conservation or revitalisation of heritage and eco-cultural values. We have analysed the transformation of these areas over the last 50 years (1970-2020) from different perspectives: land use, urbanisation processes, changes in the road and rail systems, use of buildings, green and blue infrastructures, etc. In this paper we focus specifically on critical examination of the existing and emerging urban planning and landscape strategies and instruments in the cities under study, particularly concerning the 12 selected areas. We deal with those strategies that seek to maintain and enhance environmental and landscape quality. Open space management, sectoral policies, comprehensive interventions such as soft infrastructure, river parks or green corridors have also been analysed in landscape plans and projects (Figure 4).

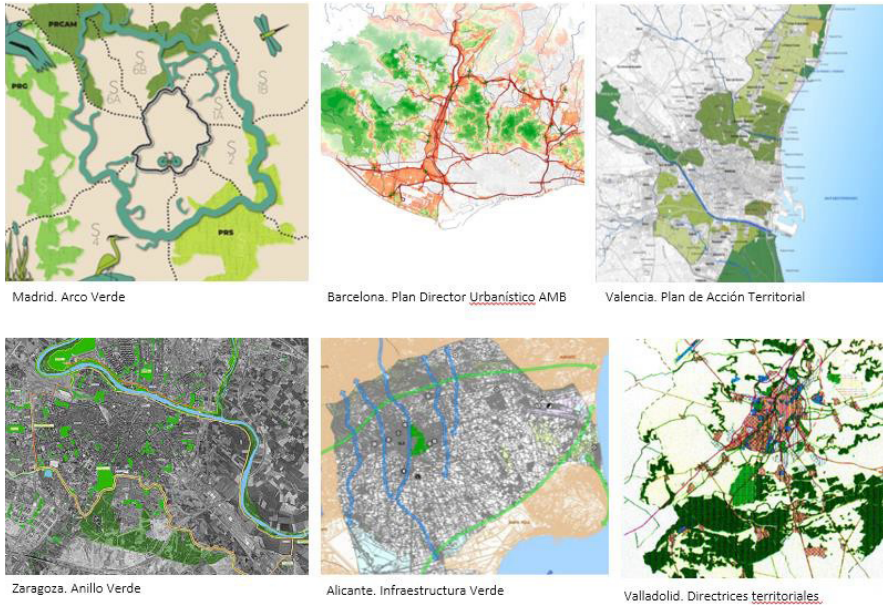


Fig. 4. Planning and Peri-urbanization in Six Spanish Cities: Madrid, Barcelona, Valencia, Zaragoza, Alicante, Valladolid.

MADRID: AN UPDATED VERSION OF THE GREEN BELT STRATEGY

Madrid is an interesting case in which a certain **continuity** with the idea of the Green Belt can be seen, now recovered in other versions. Thus, both the so-called ‘Metropolitan Wood’ and the ‘Green Bowl’, recent projects of the City Council and the Community of Madrid, respectively, can be considered as updated versions of the 1946 Green Belt. These new versions of the Greenbelt, together with the Manzanares River, constitute the main ecological axis of the city²⁴. They are therefore updates that are not strictly urbanistic but come from environmental agencies or departments.

BARCELONA: INTEGRATION OF PLANNING AND ENVIRONMENTAL APPROACHES

In Barcelona, the **integration** of different approaches in the renewed urban planning of the metropolitan area is noteworthy. A new Metropolitan Urban Master Plan (PDUM) adopts a more strategic and regenerative vision, with greater attention to the environmental dimension and urban ecosystems. Some instruments, such as the Baix Llobregat Agrarian Park or the Framework Project for the Ecological Recovery of the Llobregat River, are examples of this transformation. Secondly, several landscape and public space projects are being developed, completing the cascade of interventions at all scales in this peri-urban territorial mosaic²⁵.

VALENCIA: INNOVATIVE PLANS FOR PRESERVING AGRO-URBAN PERIPHERIES

Valencia stands out for the **innovation** of its most recent Territorial Action Plan (PAT). The aim of this 2018 plan is to enhance the value of the landscape of the Huerta (Orchard) as a historical, cultural, natural and agricultural heritage site. One of the specific objectives is to try to reduce urban pressure on the Huerta. Some important landscape projects, such as the Turia Source Park or the Valencia Estuary Park, aim to create a 'green link' between the Turia riverbed and the maritime settlements. All these measures are included in the Valencia Green and Biodiversity Plan²⁶.

ZARAGOZA: CONNECTING GREEN CORRIDORS THROUGH RIVERFRONTS

Zaragoza's commitment has been the **networking** and strengthening of the open spaces and green corridors system, and the integration of the main rivers into the city. The Ebro Riverside Project (2001), developed with the International Expo 2008, and more recently the new Green Infrastructure Master Plan (2017) include general strategies and sectoral plans affecting peri-urban areas. Some actions to close the Green Belt and restore orchards in the peri-urban area are being developed as a continuation of these strategies²⁷.

ALICANTE-ELCHE: CULTURAL ASSETS AND WORLD HERITAGE SITES

In the case of the Alicante-Elche metropolitan area, the key concept of the IV is again the starting point. The introduction of landscape programmes in border areas, with appropriate management of green infrastructure, is essential to achieve the desired articulation between the urban and rural environment. The articulation of green infrastructure at different scales is a great opportunity for the Palmeral de Elche (Palm grove), declared World Heritage Site. In this case, it is not clear to what extent the urban planning decisions of the last few years have been effective²⁸.

VALLADOLID: URBAN PLANNING GUIDELINES FOR THE CITY AND SURROUNDING AREA

Valladolid is trying to leapfrog from urban to metropolitan planning. A system of Green Belts, which interact with a network of soft itineraries, is defined in the Spatial Planning Guidelines for Valladolid and its surroundings (2001-2020). Despite the plans developed and proposed, it is acknowledged the difficulties to guarantee a change of perspective that consolidates the eco-cultural value of these peri-urban spaces only through this type of planning instrument²⁹.

Figure 5 shows a sample of the research that has been carried out at different scales in the specific case of Zaragoza:

It is clear from this analysis that in almost all Spanish cities there is a degree of continuity with previous approaches, which have only been the subject of reinvention in recent decades.

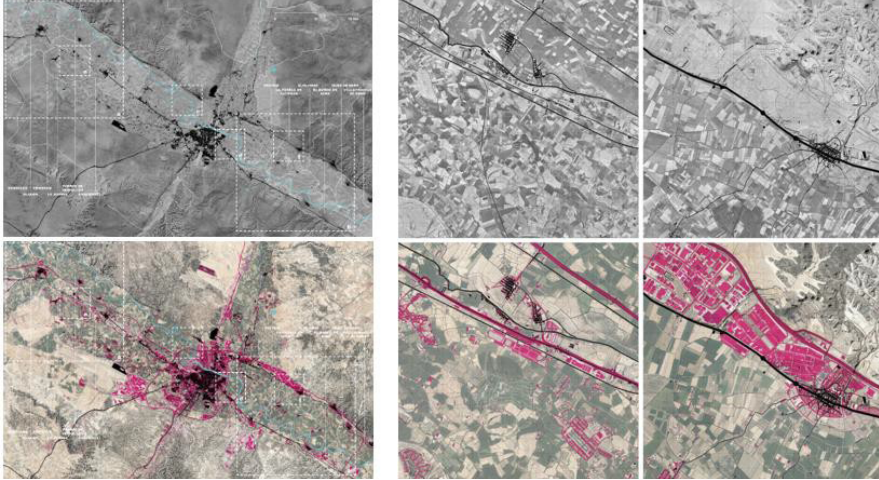


Fig. 5. Peri-urban expansion in Zaragoza at two scales. In black, the situation in the 1970s. In fuchsia, the situation in the 2020s.

Another common feature is the generalisation of the new concept of green infrastructure (GI), which has been adopted by almost all the cities. In parallel with urban planning, public space projects of a landscape nature also constitute a fundamental part of the requalification of peri-urban areas, being one of the most visible and effective actions.

It is noteworthy that, in addition to traditional urban planning, a number of instruments, strategies and specific actions have been developed for the management of peri-urban landscapes. On one side, there are urban and territorial guidelines, urban plans, landscape and public space actions and projects. Other instruments belong to the tradition of landscape and environmental planning (give examples): park systems, flood protection, conservation of natural and rural landscapes, forests, etc.

Although the diagnosis is different for each city, they all experience common processes of degradation. Problems caused by incompatible uses of the peri-urban landscape, urban pressure, neglect, infrastructure, pollution, etc. are evident. Deterioration, loss of landscape quality and reduction and fragmentation of agricultural areas are some of the problems that can arise. Lack of use leaves these areas open to illegal exploitation, which increases the degree of damage³⁰.

CONCLUSIONS

In the strategies applied to deal with the processes of suburbanisation and peri-urbanisation in European and Spanish cities, there is a coexistence of innovation and continuity, albeit at different speeds.

There are new slogans that try to innovate on old concepts and strategies: Green Plans, Green Grids, Green Wedges, Greenways, Green Arch... Green Infrastructure.



Fig. 6. Peri-urban landscapes upstream and downstream of the Ebro corridor. Situation in 2023

Some cities focus on the Green Belt strategy, not just as a tool to contain urban, suburban and peri-urban growth but rather to connect natural or green areas and in order to power the system of open spaces. A process from containment to connection is taking place.

There is a dichotomy between Urban Planning traditions and Environmental Planning. When implemented, both strategies have been successful in preserving singular landscapes, rural areas and parks. On the contrary, with a few exceptions, poor results have been achieved in dealing with 'ordinary landscapes' and processes of peri-urbanisation.

Almost everywhere, a process of change has been taking place in the Planning culture. From (conventional) planning culture to (ecological) landscape urbanism.

The better integration (different tools working together at different scales), the better control of peri-urban landscapes (preservation, dynamization and revitalization of this peri-urban landscapes with eco-cultural value).

In conclusion: our research shows that the integration of these tools (Urban Planning, Environmental Planning and Landscape Urbanism), working at different scales is essential to manage preservation, upgrading and revitalisation of this peri-urban landscapes with eco-cultural value.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTORS

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IMAGE SOURCES

- Figure 1 Image's collage by authors.
- Figure 2 Left: Image's collage by authors. Right: Laurelle and Legenne, in Amati (ed.), 2016.
- Figure 3 Image's collage by authors.
- Figure 4 Image's collage by authors.
- Figure 5 Cecila Sanz and Miguel Ángel Laurenzana, research project PER-START. Images above: Own production based on the orthophoto of 1956 (PNOA). Images below: Own production based on the orthophoto of 2021 (PNOA).
- Figure 6 Cecila Sanz and Miguel Ángel Laurenzana, research project PER-START.

ENDNOTES

1. “Peri-urban areas are areas that are in some form of transition from strictly rural to urban. These areas often form the immediate urban-rural interface and may eventually evolve into being fully urban”. *Council of Europe, Spatial development glossary* (CEMAT) (Strasbourg: Council of Europe Publishing, 2007).
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12. “There are just a few key ideas in twentieth-century planning, which re-echo and recycle and reconnect”, in Peter Hall *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century* (Hoboken, New Jersey: Wiley-Blackwell, 2014 4th ed.).
13. Carmen Díez Medina, Javier Monclús (eds.). *Urban Visions. From Planning Culture to Landscape Urbanism* (Cham, Switzerland: Springer, 2018).
14. To put this in perspective, over 24,000 homes have been built in the UK’s 23 Green Belts in the last nine years. <https://urbanistarchitecture.co.uk/how-to-get-planning-permission-for-building-on-greenbelt-land-in-the-uk/>
15. The WMGB covers approximately 225,000 ha, forming a continuous ring 8-13 km wide around a conurbation of almost 3 million people The enduring importance of strategic vision in planning: the case of the West Midlands Green Belt”, *Planning Perspectives*, 37 , 6, 2022.
16. Continuing the principles set out in the County of London Plan (1943) and the Council for the Preservation of Rural England (CPRE), founded by R. Unwin in 1926.
17. This is the definition of Green Belt following a recent Glossary: “National policy designation that helps contain development, protect the countryside and promote brownfield development, and assist with urban renaissance. There is a general assumption against inappropriate development in the green belt”, *The All London Green Grid, Glossary* (London: Greater London Authority, 2012).
18. This plan was formally adopted in 1997 as part of a wider strategy to protect the environment. <https://www.hamburg.com/contentblob/11836472/218f43663b3aa2da43df790c40508081/data/flyer-green-network.pdf>
19. Dirk Schubert, “Paths to the Green City: On the Work of Fritz Schumacher”, in Carla Brisotto, Fabiano Lemes (eds.) *Re-imagining Resilient Productive Landscapes: Perspectives from Planning History* (Cham, Switzerland: Springer Nature, 2022).
20. Since 2013, progress has been made on an impressive green infrastructure, with the implementation of a network of open spaces that aims to cover 40% of the city. The project is scheduled for completion in 2034. The strategy aims to better connect two green rings, parks, recreational areas, cemeteries and other natural areas with new routes and existing green axes connecting the peripheries to the city centre. As well as absorbing more CO2, the new green network will provide flood prevention and water cycle management.
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