

The Case of the Basque Country Capital City's Green Belt: An Effective Resilient Border

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Abstract: In this article, we analyze not only the evolution but the different effects Vitoria-Gasteiz's green belt has showed on retaining urban sprawl and the simultaneous natural native environment enhancement. Assets that granted the city the European Green Capital award in 2012, and still render important environmental benefits. Applying the beneficial effects of green borders as a soft transition between the urban and the rural realm, amid the never properly solved problem of the city limits. It means a remarkable case study to learn from, that deals with the way of giving form to the already built city limits. Starting from the very first steps with a set of small peripheral parks that meant the beginning of a whole green infrastructure strategy, this text is a succinct critical view that depicts the origins, processes and challenges of this case study. It mainly focus its scope on the North and East part of the belt (some of the earliest and biggest), where water is the main character based on the recovery of existing wetlands, giving form to a kind of green and blue belt, performing multiple functions according to the quoted key concepts. And in the end, being a repeatable example of a resilient border for medium size cities.

Keywords: Green Belts, Resilient Urban Barriers, City Borders Design Methodology, Natural Sustainable Perimeters

1. An Approach to the Theme

Speaking about resilient city borders means understanding the dangers of the interaction between the rural and the urban; an always controversial issue that has changed over the last years [1-6]. In fact, we are still trying to properly define what is rural¹. But nowadays, as the concern about protection of natural environments from urban development pressure increases, the borders of our cities gain an importance that was never imagined before. And it is within this scenario where we have to apply our best designs in

¹ The most accepted definition of rural is as the opposite to urban. But as settlements of mixed characteristics have evolved this city-countryside interactions are called in many different ways: city-region hinterland, peri-urban areas, "ex urbs", urban fringe, conurbation, etc. which results in a confusion of terms in the way Hoggart says. For more information on this issue, specially in Europe, you can also consult the following references;

- Wandl, Alexander D. I., Nadin, V. Zonneveld, W. and Rooij, R. (2014), p 50-63.
- van Eupen, M. Metzger, Miriam. J. Pérez-Soba, M. Verburg, Peter. H. van Doorn, A., and Bunce, Robert Gerald H. (2012), p 473-482.
- Pizzoli, E., and Gong, X. (2007). p 2-13.
- Waldorf, Brigitte S. (2006)

order to keep back the undesirable and ubiquitous sprawl. If the historical city built up its walls to defend itself from the outdoors dangers, today we can say the modern urban context has to redefine its boundaries in order to maintain its surroundings as natural as possible. Swinging back the tendency of a no longer possible infinite development while simultaneously turning these retaining buffers useful, resilient and also attractive. Considering this background, the purpose of the research consists on assessing the process and primary results of a green infrastructure recently built upon significant but almost hidden natural resources.

Besides, if we consider nature as an independent counterpart and let it express without interferences, we will realize it never cheat us. And our understanding coming out of this experimental dialogue can lead us to a successful relation with the environment, based on a respectful interaction among equals. The problem remains in the fact that we are not used any more to consider this option when we plan whatever kind of urban development, and tend to treat the land as a blank piece of hardware where everything is possible due to the technological progress. But as we already know, this situation has become really unsustainable.

And it is precisely this situation which address the significance of the research, indicating this sort of problems can be faced successfully using basic assets, most of the times already allocated within the close environment.

So, it is a matter of changing the idea of what is really necessary to protect, improve or develop, and therefore find better solutions for our urban borders; where the interaction of different urban fabrics and natural landscapes can coexist, and enhance each other if they are allowed to keep their own identity. Taking also into account that it is precisely in these peripheries where outer effects affect more clearly and strongly to human population², fauna and flora.

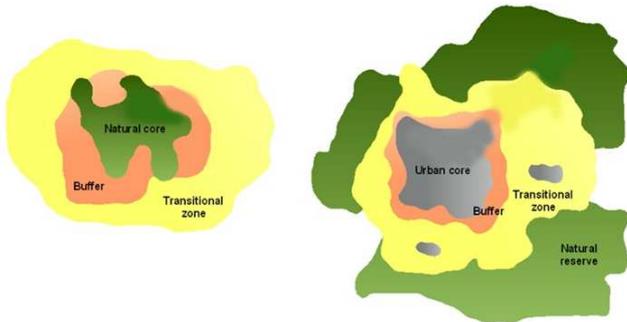


Figure 1. The change of focus about what to protect.

2. Definitions and Related Concepts

There have been many different forms of wrapping up a town throughout history, but reversing this defensive front from the outdoors to the indoors, definitely means a new approach to its design development. The concept of an almost waterproof surface against external conditions must be replaced by a much more permeable buffer, where the ideas of joining, articulating and interacting are much more important than those of retaining or tearing territories apart.

However, the idea of connecting areas through green structures is a long-term methodology used in many famous case studies throughout history. We can remind Ebenezer Howard's garden city, a reaction against the overcrowded and unhealthy city as a result of the industrial revolution. Or even before, the interspersed medieval city with its orchards and backyards mixed up with scattered buildings and detaching walls. Even the utopian proposals from the in-between French enlightenment architects used those vast natural landscapes to relate their huge and abstract architectural proposals. There has been also examples of green belts in different times and places, such as the Vienna or the London ones, and winding or straight green lines like the remarkable Emerald Necklace in Boston, or the latest successfully intervention in NY highline. And to a certain point, previously all of them have represented some kind of border for the built environment.

Nature, within its different scales, has always been sort of a complement for the urban fabric, a desirable condition for

keeping people healthy and happy. But nowadays we should result more ambitious and be aware of the importance of new concepts such as the so-called green infrastructures, that tries to make the system (and not just the people) work better (as grey infrastructures used to do with means of transportation). So again, it is time to revert the idea, and consider the green realm as a frame for connecting different areas and people, rather than just being a beautiful picture. We are not talking only about the advantages of parks within the city; we are trying to apply the use of nature as an urban tool instead.

In this context, a smart management of green networks can not only enhance the general living in our cities in terms of health, but also and specifically fix particular problems concerning mobility, air and water quality, wildlife, and of course borders resilient enough to guarantee better protection against urban sprawl and global warming. The modern term UGB (Urban Growth Boundaries) is closely related to these issues too [7], and has been recently adopted by remarkable and concerned US cities to achieve those targets.

3. Problems and Possible Challenges

But every case is a different one, and although these ideas are shared by a vast majority of city decision makers, most of the times it is quite impossible to apply a generic rule of thumb. The identity of each place demands to consider what has been called as the ethics of the land [8]. A respectful approach based on asking to the site and the surrounding environment what they want to be, and how they prefer to behave³. And wherever this idea has been part of the proposal, it has always led into a successful result. So, the main challenge is to focus on every specific location, taking advantage of existing and singular qualities, and avoid generic approaches. In fact, it is really awkward to realize that we are facing sustainable proposals just as the modern movement did in architecture during the twentieth century; by just defending a general and ubiquitous view, that in the end turned out to be absolutely wrong, because of its uniform set of proposals.

We must never forget that the identity of the place is probably the strongest character to physically defend sustainability. History and traditions prove it all over the world, and we must remind that every natural landscape is the fine evolution of a dialogue between humans and their particular environment, which is always a very difficult discourse to export. Bringing up the importance of the context.

And there is precisely where problems related to the smart growth begin to show up, because there is not just one valid rule or procedure for a final success. There are several ways of doing these things properly, precautions that have to be accounted, dangers to definitely avoid, and above all, interesting examples to learn from. And this last one is the

² As Pope Francisco states in his Encyclical Letter *Laudato Si* On care for our common home. Vatican Press, 2015.

³ For example, The Arizona College of Architecture, Planning and Landscape Architecture CAPLA, has developed this concept under the idea of creating a desert sensibility. See "Architecture", The Arizona School 87, special issue, May 2002.

main theme of the present text; an example of a successful green belt in a medium-size European city.

4. The Case Study; Vitoria-Gasteiz's Green Belt

Vitoria-Gasteiz is a medium-size city (254.445 inhabitants), located in the middle of a plain surrounded by mountains. Its municipality spans about 278 km², and although it is quite unknown, turns out to be the largest in the Basque Country, in northern Spain. However, the city itself only occupies the twentieth percent of that surface. Besides, it concentrates the 90% of the population, leaving the rest of the territory almost empty and dedicated to agricultural activities (with 64 rural little villages) and forest lands (more than 9.000Ha). Its altitude (550m over the sea level), and situation (at the rim between the Atlantic zone and the central Spanish plateau) bestows a particular landscape with a variety of ecosystems which are common in mild climates.



Figure 2. Location of Vitoria, and the Basque country within the Spanish peninsula.

However, the clear division among urban, rural and natural realms is a consequence of a long-term planning activity, focused on the control of urban development with the aim to protect the rural and natural environments. Because it is true that Vitoria-Gasteiz, founded in 1181, is a planned city from the very beginning, and its circular outline spreads still today down over the plain terrain from the original hill where it was originally established.

Within this context, it is important to highlight that although the city has gone through different periods of expansion, it is in the mid years of the last century when it boosted due to the industrial growth. Nevertheless, its urban planners never forgot to reserve one fourth of the total surface to be occupied by green areas. This concern has led to a model of urban development (formal and conceptual), in which nature becomes a mandatory feature for any kind of activity, and specially for the consolidation of a peripheral and unified park.

4.1. The Origins of the Green Belt

In the late eighties, a municipal commission advised by professionals with specific backgrounds, began to consider the possibility of connecting different natural areas closed to the city, in order to give form to a green buffer between the urban fabric and the rural surroundings. It was also a good idea to regenerate diminished sites scattered among high ecological areas, and bring the trendy environmental

concepts into line with urban developments. Under this philosophy, the vision of a natural and useful green belt began to fit in among these concerns; and curiously it resulted not far from the everyday customs of the town life; where going for a walk is a very common activity.

But the beginning of this particular green belt was not so green. In fact, the first idea was to surround the city with a water belt, trying to avoid the runoffs of the southern rivers into the sewage system⁴. Instead, it was clear that for a natural city limit improvement, it was much easier to apply a green strategy, helped by the different landmarks such as forests, hills, paths, meadows and impoverished but potentially interesting areas that were identified in detail as existing features. Thus, the work began with a blurred perspective based on small activities of environmental regeneration, mainly focused on improving the quality of the soil and increasing the amounts of trees and bushes. Of course, not forgetting the importance of the water.

The chosen sites were initially classified by two different types; Those that were already recognized by the environmentalists as valuable sites, and the abandoned lands with not any previous interest but great potential such as pits, or junk yards; mainly under public property. Places where any kind of sensible action would improve its state of the art, scattered around the perimeter of the city but with an easy connection (that had to be redesigned too) in terms of a sustainable mobility; walking, cycling, horseback riding... Mixing both radial and peripheral paths that allowed not only easy access from the urban core, but also a full random connection among them.

These early detached actions gave also form to a variety of different little peripheral parks, each one with its own features, but still located more or less at the same distance around the city limits. Conceptually, the belt was already closed, but for the moment it was just a drawing, and the real situation still needed a whole set of strategies in order to complete the green line of the ring. From the educational point of view to the urban planning frame. All of them heading to consolidate the environmental approach of the whole set of development regulations to be applied.

In fact, these areas appeared like green spots that highlighted within the previous blank map. And enhanced not only the image of the almost forgotten natural boundaries, but also provided nice leisure places for the nearby population that began to recognize them as theirs. Eventually, they even converted themselves into the best fulltime caretakers. In the end this attitude became basic in terms of use and maintenance, due to the scarce municipal resources and the increasing amount of land to take care of. And somehow developed a new way of dealing with these public natural spaces into something we could describe as a

⁴ William Morris, the famous Arts & Crafts architect and artist, wrote about "The profanation of the Wandle". He adored the river that ran through his Merton Abbey Works and even designed one pattern under the named Wandle 'to honor our helpful stream'. It contained the soft water that played an important part in dyeing textiles, and he also was one of the firsts to be worried about the degradation of the river converted into part of the sewage system.

wilder model of what we all understand as a nature park; with different mixes and sizes of native grass and bushes, raw paths with natural and permeable materials, and no benches, dustbins or litter containers except in the accesses. Not even light fittings or moved lawns... Just self-sufficient nature.



Figure 3. Set of peripheral parks that gave form to the green belt.

4.2. Process and Goals

Of course, it took some time and a set of extra activities to legitimate this approach in order to appreciate this alternative way of doing things. Besides the earthworks, a full educational program was launched in schools and civic centers, trying to get as much population as possible involved in the process. Different leisure orchards for the elderly were set up under institutional surveillance too. The mass media and the different prizes and recognitions did their own too. And after this kind of wavering beginning, the blinking dotted green circle began to appear like magic, not only all around the city, but in people's minds too. It was composed by different (in size and hue) recognizable stains of nature, but with no great effort the whole belt could be easily imagined at the background. So, the next steps were just to follow with the same kind of actions as part of the process, like little gestures unified under a global plan that was behind every action; and although still concealed, with the final intention of joining them up altogether. Giving form little by little to the about 30,8 kilometers complete, but still today permeable green belt, with different widths under a swinging line that was able to connect the previous independent parks, and guarantee quality radial accesses to the surrounding mountains, and the natural path network farther on.

But nothing is ever that easy, and as we talked about putting limits to the city (although being absolutely natural), we must remember that at least in this case there was initially a strong opposition by developers and other businesspersons related. That is a reason why the swinging green line took a little longer to appear as a real thing, although in fact it resulted a benefit for all. It gave time to

consolidate a new model for the city, more concerned about quality life and sustainable issues. And in the end, even the real state representatives took advantage of the nicer environment to sell properties, and fully agreed with the whole operation as an asset for their own particular business. For one time, the public and private interests worked together in the same direction, and the whole city improved with the situation.

In fact, this irregular green line is the result of a complex process of relating not only pieces of available land, but different political, educational and economic issues too, like beads of a natural and social necklace. Besides it is also the reflection of the morphology of the city itself; kind of a circular structure with radial ways heading out to the surrounding villages and landmarks. And finally it really corresponds to the existing identity of the site, which therefore becomes an obvious consequence from the context that does not need any more explanation, because everyone can easily read it.

4.3. Achievements and Unsolved Issues

Vitoria-Gasteiz's green belt is not only the main reason why the city was awarded as European Green Capital back in 2012. It has turned out to be a pride for all its inhabitants and institutions. And a useful green structure to be enjoyed by everybody, no matter the age or social condition. We could say it has even become a kind of example for medium cities concerned about sustainability and biophilic issues; and nobody doubts about its convenience to retain the urban sprawl and enhance the quality life of its inhabitants. It has also shown an important level of resiliency during the years in service because of its living nature. For example, the cyclical floods suffered by the Zadorra river in the north boundary of the city, have been successfully retained by this natural buffer that performs like a containment pool in winter situations, while it works as a wonderful playground during the summer time.

This same effect can be detected at the East of the city edge, in the area known as Salburua. A zone of marshes that were dried up along the past century for agricultural purposes, that eventually has been recovered to its natural behavior.

Despite the international commission gained by a famous landscape architecture office in the nineties, who proposed a conventional design of a fragmented park following different styles, a deep and more accurate analysis demonstrated that the right decision was to recover the original aquifer. This action meant the enlargement of the green belt in more than sixty hectares; including the previous wetlands which still today represent not only an important stop in the migratory routes for birds close to the city, but also a beautiful changing landscape according to the cycle of wet and dry seasons. And although most of the people assess the bucolic example of the recovery of the marshes, the important challenge is its undoubtedly success in retaining the urban sprawl and the effective control of the water flooding.



Figure 4. Salburua contest proposal (left) and the final design (right).

But there are still weak points to solve in order to strengthen this fragile structure. First of all, it is necessary to completely close the ring, specially at the south, which is an unresolved matter as there are still junctions to join properly in terms of physical space and quality [9]. Different undesirable situations, uses of the land, and urban-rural fabrics require deeper analysis, and further imaginative proposals. But even more important is to consider that probably this linear boundary itself lacks the ability to play alternative and more complex rolls, others than those related to simple peripheral urban parks. It is true that today people consider the green belt part of the city, and use it in their own particular ways according to their hobbies, age or preferences, but the whole green structure is mainly just green stuff, and sometimes forgets the capability to perform other important commitments such as those urban ones coming from the particular needs of the city. By researching these possibilities, we will probably be able to discover new ways in order to improve it, support the necessity of this natural belt, and defend its longer life too.

Today we already know it is a resilient border, as it has succeeded in keeping back the urban sprawl [10-15] improving the quality of the nearby natural environment⁵, but we still do not know how to gradually and successfully end the city fabric in every specific place. The transition between rural and urban is a pending matter not only in planning or landscaping, but also in social, economic and weather change issues. Our common future depends on that, and this example shows a tool that has to be analyzed, tested and developed under different and more ambitious conditions. So, there is a lot of work to be done under this broader perspective.

4.4. Still to Determine

No living city is ever ended up. Nor is this green structure, which according to the previous ideas has to be developed, enlarged and enhanced. And for doing that, the guidelines followed until now should shift to conduct new research lines; of course, if our intention is to keep this green belt moving. This is the challenge, because otherwise there is the danger of its fading out after a period of an initial great success.

To be honest, it is true there have been proposals of

⁵ A consequence of this situation is the process of densification within the existing urban fabric to allocate a significant extra number of residential dwellings. It guarantees a better mix of uses and a more compact city model, requiring less expense and resources to keep proper quality services for the inhabitants. And in the end keeps the not renewable main resource, which is the land, free and natural.

repeating the idea of the green belt with different sizes or scales within the city. One of them called after “the interior green belt”, which has been partially built, being in fact no more than a linear street with an artificial stream outlined by bushes. Another one is the much more interesting “outer belt”, which shares the connectivity principles that boosted the original one, relating territories and even regions by the natural landscapes and traditions like the shepherd’s highland ring. And it is probably this idea of connecting spaces, activities and people what has to be determined, much more than just pursue a most of the times out of contest picturesque image. It is not a matter of a repetition of symbols or finding out a beautiful view, it is rather an effort of imagination to multiply the effects that the smart use of different natural strategies can render.

The global challenges we need to face right now require not just an easy set of bucolic images⁶, but powerful strategies based on the community needs within the urban framework. We can conclude green infrastructures can play an important role on that, because they can facilitate these relations and ease outer threats.

5. Conclusion

It is quite clear we can learn different things out of this example, as it represents another way of understanding the relation city-nature in a more respectful way to the existing territorial, cultural and historic values (all of them related). But there are other underlying issues we can also address:

First of all, the always interesting use of nature as a raw material to give form to our designed environments, no matter if they are absolutely urban or more rural. It is flexible, inexpensive, very easy to look after, and of course resilient. No doubt nature always plays the role of an effective buffer.

As a living solution, due that it evolves in time according to the specific conditions of the site, a green ring of this kind unfolds a variety of scenarios which feedback the process endlessly. And because of the same reason, it tends to preserve the local identity by gently merging into the landscape. Maybe it is all about that; act according to what you see around, instead of inventing awkward entities. And try to physically consolidate these actions to guarantee the necessary (and mainly biologic) flows of life.

Due to their long-term span, it is obvious these activities have to be envisioned in good time by planers and designers, but also have to perform strategic milestones attractive enough for the decision makers and politicians. Otherwise, they will no longer turn out visible assesses for all the agents involved, and specially for the community. Besides, it demonstrates that it is possible to make private and public interests work in the same direction. They both can benefit from this kind of procedures and in the end, it is again the

⁶ As stated in the Conceptual Considerations about Salburua Urban Park. Departamento de Promoción Económica y Empleo Vitoria-Gasteiz City Council. June, 1994.

city itself, the population and the territory, who clearly benefit from this joint venture.

On the other hand, this model corresponds to a protective way of planning, advocate of natural space interconnections, regeneration of degraded areas, and better use of existing compatibilities. It seeks to re-structure the territory, by improving its biodiversity. And it reports social convenience because of the better and more intense use of the urban periphery as a leisure facility. But it also has to be taken into account firmly from the very beginning within the plan, and be strongly defended by the administrators who take care of it.

Somehow, we could consider it as a kind of software to apply with flexibility in order to progressively regain natural soil, and reduce the urban impact. Because it better defines the outline of the built fabric, creating specific transitional areas to be included in the open green surface amount.

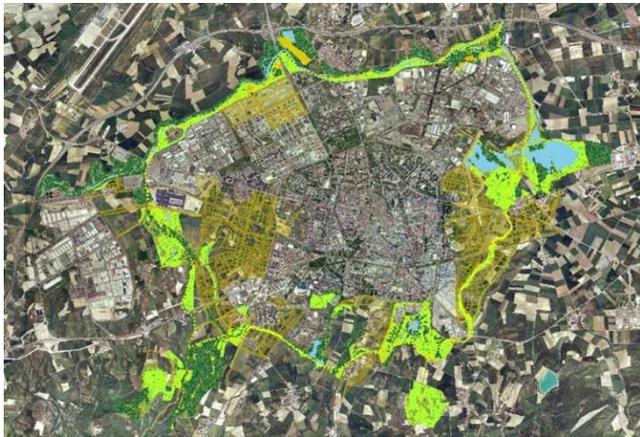


Figure 5. The profile of Vitoria-Gasteiz's green belt outlines the city limits as a resilient and sustainable border.

From an academic perspective, we can conclude that this kind of strategies are an open research line for getting better and more resilient city limits. The experience acquired from this case study (and of course many others scattered all around the world), have proved its efficiency and broad scope. And from the citizens shared point of view, they also offer a nice frame for our better living, which is definitely something we all have to work for.

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