Km Vert (Green Kilometer project) SYSTEM FOR URBAN REGENERATION

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Abstract
Urban abandonment is a phenomenon linked to the socio-cultural and economic changes occurring in modern cities, often leading to the degradation of disused residential and industrial areas. However, these places, initially considered unattractive, can become opportunities for urban development if regenerated, with the involvement of local communities in the process. Archaeology plays a fundamental role in this regeneration, helping to strengthen territorial and socio-cultural identity through different dimensions: socio-cultural (exchanges and migrations), historical-artistic (democratic awareness), urban (history of settlements), industrial (transformation processes), climatic (environmental changes), energy (evolution of resources), and experimental (validating archaeological interpretations).The accelerating pace of climate change and the inability of cities to adapt require urgent intervention. The "Km Verde" project responds to this need, aiming to transform an urban street into an attractive area centered on the interests of citizens. It is not just a street reorganization but a radical and innovative intervention that promotes sustainable urban regeneration capable of attracting both tourists and residents. "Km Verde" should not be seen as an isolated intervention, but as the first step in a broader, more inclusive, and dynamic urban vision intended to improve the quality of life. Furthermore, the project uses modern technologies, such as Artificial Intelligence, to develop urban solutions that interact with the socio-cultural fabric of the area, offering more targeted and effective solutions. If successfully implemented, "Km Verde" could become a model for other cities, addressing similar challenges in a context of social, economic, and environmental change.

Key words: *Urban abandonment, Regeneration, Territorial identity, Industrial archaeology, Climate change, Km Verde, Artificial Intelligence*

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[1] Master Urbanisme et Aménagement course Mobilité, Ville et Architecture in Rabat, Morocco, by Xavier Dejardins and Andrea Marcuccetti

Introduction

Contemporary cities are profoundly shaped by socio-cultural and economic changes that, if not properly managed, often lead to the abandonment of certain urban areas. The abandonment of residential and commercial spaces is a phenomenon primarily affecting peripheral zones and historical districts, such as areas around old factories, where buildings and spaces that once thrived are now left to deteriorate. However, these initially uninviting places can be transformed into new opportunities for urban development through regeneration processes that actively involve local communities. This is where the "Km Vert" project comes in – an urban regeneration initiative distinguished by its visionary and radical approach to the transformation and use of the urban fabric. The marketing component should not be overlooked; creating a logo provides clear recognition for the project, which also has the added advantage of fostering social cohesion and attracting economic resources through customized merchandising.

The logo[2] will: 

in fact, be customized according to specific contexts, such as the version used for the University course: Mobilité, Ville et Architecture in Rabat, Morocco, thereby giving the project a "tailored" identity:

Urban Regeneration and the Role of Archaeology

In the context of urban regeneration, archaeology plays a fundamental role—not only as a discipline that studies the past, but also as a tool to recognize and enhance territorial and socio-cultural identity. Regeneration is not merely a physical operation aimed at restoring buildings; it is a process that must consider various aspects:

- **Socio-Cultural**: The restoration of historic places must take into account the social exchanges, migrations, and invasions that have shaped cities, contributing to cultural diffusion.
- **Historical-Artistic**: Historical analysis helps develop a more aware, democratic, and inclusive society, built upon a shared heritage that narrates the city's history.
- **Urban**: Every regeneration project must preserve the historical memory of the urban settlement to understand the evolution of the place and its connection to the present.
- **Industrial**: Industrial memory represents an important chapter in the city's past and must be preserved in relation to economic and technological changes.
- **Climatic and Energy**: Urban regeneration must consider climate change and energy resources, making adaptation to new environmental scenarios a fundamental objective.

[2] Created by Andrea Marcuccetti©

- **Experimental**: Archaeological research can benefit from experimental protocols to verify and reinterpret urban heritage within an innovative context.
- **Religious**: Research into the various religious sensitivities present in the territory that have contributed to shaping the socio-cultural landscape, while also considering the ongoing migratory flows, which have now become an integral part of current migration dynamics, each with their own religious beliefs and sensitivities.

The "Km Vert" Project and the Challenge of Climate Change

Climate change, with its rapid progression and cities' inability to adapt, led to the birth of the "Km Vert" project. This initiative seeks to transform an existing kilometer of road into a green space through a simple yet radical operation. This is not a "colonial" intervention, imposed from above without a connection to the local reality, but rather a project that incorporates the **Genius loci**—the distinctive character of the place—in an inclusive, attractive, and sustainable manner. The goal is to create a high-quality, non-standardized intervention that reflects the identity and needs of the city. The choice of a "Km Vert" represents a move away from the "mineral city" and a step towards creating a more livable "vegetal city" urban environment capable of responding to the challenges of climate change.

Analysis of the City and Project Definition

A fundamental aspect of the "Km Vert" project is the in-depth analysis of the urban context, starting with an understanding of the city's livability, its socio-cultural fabric, and territorial challenges. The selection of the kilometer to regenerate must be based on several factors, such as its socio-cultural relevance and its potential to attract both citizens and tourists. The chosen street must be viewed not only as a physical route but also as a starting point for a regeneration process that will have long-term effects on the entire city. The final goal is to stimulate widespread interest in creating further "Green Kilometers" that can gradually expand, triggering a domino effect that involves the community in a process of change and innovation.

"Km Vert" becomes a shared space for all the buildings that face it, with residents using it collectively—through gardens, urban farms, playgrounds, social spaces, or simply for strolling—while also remaining open to other citizens during exhibitions, concerts, or casual walks.

Design methodology

1. **Identity of the Place**: Every place has an inherent identity that must be respected and enhanced. The design must take into account the cultural, historical, and social specificities of the area. For example, cities like Jerusalem, Montréal, New York, or Florence each have a unique identity that guides their evolution. Identifying this identity allows for the development of a project that not only integrates with the territory but also highlights its singularity. The cities are Jerusalem (religion), Montreal (lingua), Singapore (nation building), Honk Kong (materialism), Beijing (political power), Oxford (learning), Berlin (tolerance and intolerance), Paris (romance), New York (ambition), Florence (renaissance), and Rom (empire).
2. **Urban Analysis**: A functional and socio-cultural analysis of the city is essential to understand the needs and desires of the citizens. The analysis should also include a study

of vegetation and green spaces, with particular attention to tree species that can adapt to future climate changes.

3. **Design of the "Green Kilometer"**: The design of a "Green Kilometer" must begin by identifying a stretch of road that is not necessarily straight but has significant potential for transformation. The chosen road must be connected to future urban expansion prospects and designed to reduce urban heat, with trees and green areas as the main protagonists. This intervention aims to create a "public environment" that becomes an integral part of citizens' daily lives.

Artificial Intelligence Applied to Urban Design

Artificial intelligence (AI) is a crucial resource for the urban design of the future. Thanks to its ability to process data and simulate complex scenarios, AI can be used to improve the quality of projects and offer new innovative and sustainable solutions. In the case of "Km Vert," AI can be employed to analyze urban morphology, predict climate change impacts, suggest solutions for energy resource management, and create intervention models that respect the local socio-cultural context. AI, therefore, not only supports designers and administrations but also contributes to raising citizens' awareness, opening up new horizons for inclusive urban development while maintaining its socio-cultural vocation.

(image AI, 1-12 created by Andrea Marcuccetti© course Mobilité, Ville et Architecture in Rabat, Morocco)


image AI 1


image AI 2

image AI 3

image AI 4

image AI 5

image AI 6


image AI 7


image AI 8


image AI 9


image AI 10


image AI 11


image AI 12

Conclusions

The "Km Vert" project is not merely an urban regeneration initiative but a truly innovative and transformative vision of the very concept of the city. In an era marked by climate change and the urgent need for sustainability, "Km Vert" offers a concrete and practical response to the environmental, social, and cultural challenges that modern cities face. Rather than being an isolated intervention, this project represents the first step of a broader system of urban transformation that could expand globally in the future. Its ambition goes beyond simply regenerating a kilometer of street, aiming to trigger a virtuous cycle that involves the entire city, fostering a renewal process rooted in the cultural and social heritage of the territory.

Urban Regeneration as a Continuous Process

"Km Vert" is part of a paradigm of urban regeneration that recognizes the deep connection between the city and its community. In a world where urban development models have often led to the separation of residential, commercial, and natural spaces, the project offers a vision where public spaces become the beating heart of the city. Every regenerated kilometer is not just an aesthetic or functional improvement to the street but a process that transforms the urban environment into a space for social interaction, active participation, and sustainability. Every intervention becomes an opportunity to strengthen the local community, providing inhabitants not just with physical space but also a sense of belonging and collective responsibility.

The idea of creating a network of "Green Cities" aligns with this direction. This is not a mere sum of individual interventions, but a movement that connects different urban areas, uniting kilometers of regeneration into a large integrated design. The connection between

these green areas can become a true network of urban resilience, capable of effectively addressing climate and social challenges. "Green Cities" will not only be places where trees and nature play a central role but also places that tell a story of recovery and adaptation, where local traditions are valued and integrated into a project of innovative development.

The city as a Living Ecosystem

In this context, the city is no longer seen as a static entity but as a living ecosystem, constantly evolving and adapting to the needs of its time. The "Km Vert" project proposes a more resilient city, capable of responding to climate change and social challenges. Sustainability becomes the guiding principle, not just in environmental terms, but also in terms of social justice and cohesion. Urban regeneration must go beyond simply creating green spaces or ecological infrastructures: it must also involve the enhancement of human capital, strengthening local communities, and creating opportunities for civic participation. In this way, the city becomes an inclusive place where all citizens, regardless of their origin, social class, or background, have access to common resources that improve their quality of life. The inclusivity of the "Km Vert" project is also reflected in its collaborative approach. Local communities are invited to actively participate in the regeneration process, not only as beneficiaries but as key actors. The idea of involving citizens, institutions, and other stakeholders in a constant and productive dialogue is one of the key elements of this approach. "Km Vert" is not a top-down solution but a proposal born from the bottom up, from listening to the needs and desires of the community.

The Social and Cultural Dimension of Regeneration

Urban regeneration, such as that proposed by "Km Vert," also has a strong cultural dimension. Every intervention is an opportunity to rediscover the history of a place and to memorialize the traditions that have shaped it. However, culture should not remain anchored to the past; it must be a living element that renews and adapts to the needs of contemporary society. The project thus becomes a tool to celebrate and integrate local culture into an innovation process that does not sacrifice historical memory but uses it as a starting point to build the future. Reflecting on what constitutes a place’s identity thus becomes a key resource for designing cities that are truly sustainable, not just environmentally, but also socio-culturally.

Towards a Global "Green City"

The "Km Vert" model also provides an opportunity for broader reflection on the future of global cities. While many cities still follow development models that emphasize expansion and growth at the expense of quality of life, "Km Vert" promotes an alternative paradigm, where environmental quality and social health are the priorities. The creation of "Green Cities" represents a concrete alternative to the model of uncontrolled urbanization, creating spaces that promote physical, mental, and social well-being. In this sense, "Km Vert" is not just a project for one city but an idea that could be applied globally, as part of a movement to radically rethink how we design and live in our cities.

Sustainability as a Global Objective

Finally, one of the most significant aspects of "Km Vert" is its commitment to sustainability in its broadest sense, encompassing not only environmental eco-sustainability but also social and economic sustainability. Regenerating a kilometer of street is not just an ecological or

aesthetic improvement but a new opportunity to develop local economies, attract investment, and create spaces that are economically sustainable. The project is not merely an expenditure but an investment in the city's future, offering long-term benefits in terms of well-being, social cohesion, and economic growth. Furthermore, the integration of crowdfunding as a potential financing tool adds a dimension of direct participation, allowing citizens to be actively involved in funding and managing change.

In summary, "Km Vert" represents an opportunity to rethink the future of our cities. It is not only an urban regeneration project but a movement that invites communities to imagine and build more livable, inclusive, and sustainable cities. Each regenerated kilometer becomes a step towards a "Green City," a place where the environment, culture, and people are at the center of the development process. The project challenges us to reconsider our relationship with the urban environment and recognize that true regeneration comes through active citizen engagement, the enhancement of local identities, and the adoption of innovative solutions that can address global challenges such as climate change and sustainability.

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