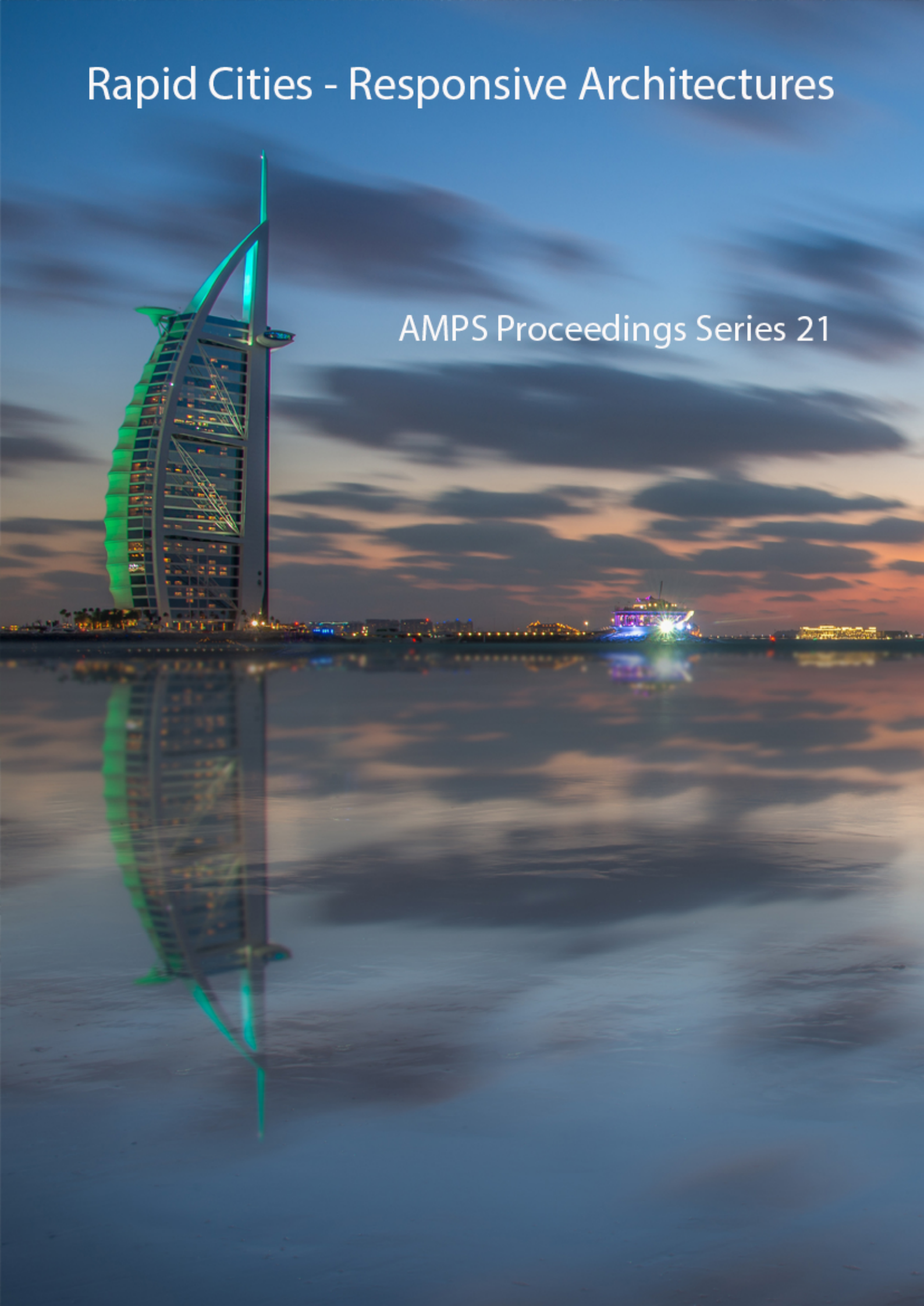
Rapid Cities - Responsive Architectures



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Rapid Cities – Responsive Architectures

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INTRODUCTION

Rapid Cities – Responsive Architectures

This publication is the product of the conference *Rapid Cities – Responsive Architectures. A virtual conference examining design, planning & construction in the modern world*. November 2020, Dubai, United Arab Emirates.

The conference call centered around the rapid nature of today's urban and architectural projects, especially as could be seen within the cities of the Arabian Gulf. From 3D printed villas to rapidly deployed large-scale urban developments and architectures of 'spectacle,' the world of design appears to be changing fast and responding to technology and digital fabrication advancements. This change is not only in the construction methods, but it also finds its way into advances in materials, collaboration tools, development regulations, and sustainability measures, to mention a few. So, are we witnessing the dawn of a new era in design and construction? With the Expo 2020 site at its heart, Dubai appears to be the poster city for these new innovations, and an ideal setting for a conference focused on rapid change. The papers included in these proceedings were reflective of these notions and covered some of these diverse and exciting questions and much more.

This conference was initially planned to coincide with Expo 2020, yet Covid-19 became a global crisis in early 2020 seemingly overnight and managed to bring the world to a near halt. The conference, therefore, shifted from an on-site event to a virtual platform due to travel and safety concerns. The Expo 2020 itself has been delayed for a year, citing similar concerns. Meanwhile, Covid-19 challenged how we view and interact with the built environment and how we move about it. It also demonstrated that innovation in the built environment and its design and construction is somewhat overdue. The need for hospitals, quarantine facilities, urban green spaces, transport options, and all-new office, work, and housing typologies became immediate. A major rethink of our urban environment is currently underway and is much needed. Major emphasis on urban health, sustainability, and resilience are some of the apparent impacts of the pandemic on the built environment. While some of these themes were reflected in the conference papers, a much bigger debate is currently underway globally. There is no doubt, though, that fast-paced, rapidly designed, and deployed architecture(s) are here to stay, and the future of our cities, urban environments, and design disciplines is likely to be different.

Both the conference and the publication were organized by the research organization AMPS, the academic journal *Architecture_MPS,* and the Department of Architecture at the American University in Dubai.

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REGENERATION AND SUSTAINABILITY: A COMPARISON OF PRACTICES

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INTRODUCTION

In a view of a city as a living system reframing urban theories and images starting from the 20th century, *regeneration* is the organic metaphor with which a contemporary city was represented,[1] as well as a very common term in political programmes and latest generation planning tools. The biological meaning applied to the urban environment does not only mean rebuilding spaces and renewing functions, but restoring new dignity to places for life where citizens can identify with. The concept of "urban regeneration" implies policies and intervention projects to improve abandoned, unqualified or socio-economically, spatially and environmentally degraded urban areas.[2] This notion has evolved over time to meet the growing needs of an even more dynamic reality, shifting from punctual rehabilitation action within the urban fabric to integrated programmes extended to the entire urban area aimed at promoting economic activities, restoring sociality, recovering urban ecosystems.[3] The purpose of regeneration is to take into account the complexity of urban habitat by encouraging development and improvement in many sectors simultaneously, so as to foster economic growth, decrease social and cultural inequity, strengthen community cohesion and social capital, minimize climate change risk.[4] Such all-embracing nature of urban regeneration is also its greatest limitation: difficult challenges along with the need to satisfy multiple interests have produced partial and incongruent outcomes favouring people or business alternatively.[5] This is why *sustainability*, in its various declinations, is embedded with urban regeneration policies, especially regarding the interaction of initiatives to support the city economy, living standards, climate change adaptation and mitigation. Regeneration aims to favor new urban life processes capable of generating social and economical dynamics, but mainly environmental ones: indeed, awareness and protection of the built environment form the basis of the whole concept of sustainability. However, including sustainability in the urban practice is to be supported by a significant cultural change, in the absence of which the essence of sustainability remains a mere label with no real content. Regeneration goes far beyond the objectives, aspirations, and results of urban upgrading. The main risk is that there will be a process of physical modification in which the final purpose is not clear: in terms of revitalization, regeneration would fail to exactly indicate methodology and approach.

Highlighting the importance of sustainable development as a guiding criterion in regeneration practices and as a part of the climate protection actions indicated by the European Commission in the Urban Agenda, this paper presents a few case studies implementing EU policies and plans. Special emphasis is given to virtuous processes and the most relevant intersectoral outcomes, by outlining the key

elements of urban regeneration able of orienting Europe towards a more livable future, in full respect of the human and environmental needs.

Sustainable urban regeneration

Living in cities and metropolitan areas offers better job and life opportunities, economic and cultural advantages that make them privileged centres of knowledge, experimentation and entrepreneurship.[6] Furthermore, they are focal points of national growth as well as places of inclusion and social integration.[7] As the most coveted places to live, over half of the world population is concentrated in urban areas which have become the main causes of resource consumption, pollution and GHG emissions putting their own survival at risk. Thus, they are contributors and at the same time victims of climate change.[8] If urban regeneration is the only real way of reducing the environmental impact, to be truly effective and efficient it must satisfy the principle of sustainability articulated in three components interdependent from each other: environmental, socio-economical, and institutional. Through flooding, heat waves, droughts, the current climate crisis has a direct physical impact on the built environment, infrastructure and citizens' health, while it indirectly impacts local economies that depend on key resources, limiting investments both social and financial capital.[9] The incremental rate migration flows from outside and inside the EU has exacerbated socio-economic inequalities and intensified the conditions of urban vulnerability due to rising poverty, ethnic diversity and social exclusion. Institutional challenges to urban sustainability are often linked to tensions between top-down technical and managerial approaches and mostly lack an organic, global and participatory vision. In spite of the importance and urgency of acting within the limits of non-renewable resources, sustainability has not yet completely imposed its own rules, but it has now become an even greater priority in architectural design as well as in urban planning and regeneration.

Integration, cohesion and sustainability in the Urban Agenda for the EU

With around 359 million people living in cities, Europe is the world's most urbanized continent. European urban areas host more than three quarters of Europe's population, they generate up to 85% of Europe's GDP but account for about 80% of energy use and they are also places where unemployment, segregation and poverty are mainly concentrated. Cities play a key role in the Urban Agenda for the EU as a driving force for territorial, regional and cross-border development, including anthropogenic and natural landscapes, environmental and cultural heritage. The Urban Agenda was created to improve the quality of life in urban areas, to ensure the growth potential of cities and to successfully tackle social challenges by promoting cooperation between Member States, Cities, the European Commission and other stakeholders. It is based on three operational and interrelated pillars: sustainability, cohesion policy, integrated approach. A special focus on sustainability is the foundation of many European initiatives from the 1990s[10] to the most recent Paris Agreement on climate change (2015) that established the 17 *Sustainable Development Goals* (SDGs) and related 169 *Targets*. In terms of urban regeneration, even the Leipzig Charter on Sustainable European Cities (2007) is an important reference in addressing important issues: physical and social degradation of entire districts; quality of public spaces; strengthening of the urban economy; integration and social support policies; recovery of existing assets. In addition to overcoming the economic recession in recent years, the current programming intends to achieve a series of objectives already defined by the European Commission in 2010 within the document "EUROPE 2020: A Strategy for Smart, Sustainable and Inclusive Growth".[11] They are five specific fields aimed to direct the EU's Regional Policy: employment; research and development; climate and energy; education; social inclusion and poverty reduction. Cohesion Policy

is the EU's strategy to promote and support the 'overall harmonious development' of its Member States and regions. To this end, the EU has allocated 50% of the European Regional Development Fund (ERDF) to urban development as an investment priority. This will be translated into sustainable mobility, regeneration of deprived communities, greater employment opportunities, research and technological innovation, support to SMEs, reduction of urban inequity, delinquency and the feeling of insecurity.[12] The establishment of an urban development platform has strengthened capacities and exchanges of experience between cities and regions, notably through building rural-urban partnerships. Cohesion Policy beyond 2020 is designed to a smarter, greener, connected, and social Europe and a new cross-cutting objective to bring Europe closer to citizens by supporting local investments. Each of these goals requires an *integrated approach* to sustainable urban development. The European Commission provides a general understanding of what they consider an 'integrated approach': the various dimensions of urban life – environmental, economic, social and cultural – are interwoven and success in urban development can only be achieved through measures concerning physical urban renewal combined with measures promoting education, economic development, social inclusion and environmental conservation. Secondly,–Cohesion Policy is upheld by a strong partnership between citizens, civil society, industry and the various levels of government as an essential prerequisite.[13] Thus, 'integrated' is a synonym for *inclusive* since it meets bottom-up schemes, whereas the involvement of actors generally excluded from traditional programming tools offers higher guarantees for the feasibility of actions. Analyzing the development of regenerative policies over the last few decades, it is evident how the tools provided by the relevant legislation are accompanied by a series of integrated planning programmes, focussing on urban management and on processes of economic growth, participation and promotion of sustainable issues.

EU PROGRAMS AND EXPERIENCES

If urban regeneration is a key focus for public policy throughout Europe,[14] cooperation, inclusion and sustainability are the starting points towards a common European methodology for urban development. In compliance with the *Leipzig Charter* and the *Cohesion policy*, many recent EU-funded programmes have contributed to renewing cities across Europe by incorporating integrated approaches and encouraging cooperation between multi-level urban authorities through online resources. Among these is the *Reference Framework for Sustainable Cities* (RFSC), an interactive tool to translate the pillars of sustainability (Economy, Society, Environment, Governance) into practice by providing exemplary cases and information for the development of new solutions compatible with the specific needs of each city.[15] On the basis of a sustainable model devoted to the least use of resources, these projects have been implemented by adopting green and low-impact strategies: recycling land and buildings, contributing to the *compact city*; promoting low-carbon and renewable systems; drawing on local resources; reducing energy consumption; fostering alliances.[16] Sustainable development is the main principle of many community regeneration programmes. That is the case:

- **Environment Action Programme** (EAP): It sets out a strategic agenda for addressing the main environmental challenges Europe faces, for protecting and enhancing natural capital, for encouraging more resource efficiency and accelerating the transition to the low-carbon economy;
- **INTERREG**: Launched in 2002, this program provides funding for interregional cooperation across Europe;
- **LIFE+**: It is the European Union's financial instrument supporting environmental and nature conservation projects. Since 1992 LIFE+ has co-financed some 2,750 projects with a total of €1.35 billion;

- **URBAN**: Launched in 1994 in two rounds (URBAN/URBAN II), the programme, aimed at solving social-economic problems in deprived neighborhoods in European cities, has acted as a catalyst for new forms of cooperation, helping city administrations to enter the European scene;
- **URBACT**: It is the European exchange and learning programme promoting integrated sustainable urban development. It works to enable cities to share good practices and lessons learned with all professionals involved in urban policy throughout Europe. Jointly financed by the European Union (ERDF) and the Member States, URBACT is active in 550 cities, 29 countries.

Regenerating Europe: case studies

In an attempt to identify the best practices of urban regeneration and with reference to the programs abovementioned, we proposed a few case studies where the urban transformations have triggered significant processes of economic, social, environmental and cultural revitalization.

Within the INTERREG framework, the project "Modernizing schools as community centres for lifelong learning", in Bremen, led to a rethink of the role of schools as multi-functional institutions that play a crucial role in urban development. Robinsbalje, a former car park in a deprived neighborhood, was transformed into a centre which offers education, health, sport and employment services in one facility to give people of all ages better future prospects. The *learning neighborhood* concept applying a holistic approach to education within integrated planning, a lived partnership by different stakeholders and the active involvement of local communities and NGOs in all the phases of the project, are key success factors of a complex intervention. This case shows remarkably how education, social inclusion and urban regeneration can be linked to the revitalization of a deprived urban area. Many post-war inner-city housing estates across Europe have to face a number of urban, economic and social challenges that the physical regeneration alone cannot tackle and needs to form part of a wider package of neighborhood renewal solutions. The IMAGE Project, funded by INTERREG, has been working on new concepts around image enhancement as a strategic element of integrated-development programmes. The *Neighbourhood branding* approach was developed and tested in the five European cities and related high-rise residential areas: Europark (Antwerp), Barton Hill (Bristol), Poptahof (Delft), Ballymun (Dublin), and Schwamendingen (Zurich). Communities and stakeholders were involved in the development of their brand, while project actions were incorporated into existing local regeneration strategies.

The URBAN II programme area in Turin lies on the southern outskirts of the city which needed intensive urban regeneration of the public housing stock, the low-quality public and green areas, and new central functions. The model adopted for this initiative, focused on the cooperation of partners and local stakeholders, can be synthesized into three guiding actions: find a new centre; get things going again; gain a new focus. With regard to innovation and sustainable results, one of the most important achievements of this initiative is the 'Forum for Local Development' aimed to provide effective monitoring by district committees and businesses, public undertakings and private companies. The Urban Pilot Project in Bilbao focused on the former industrial area of Otxarkoaga, a suburb of the city built in the 1950s, and addressed three different problem areas: environment, commercial development and economic activity. Amongst the measures to improve the environment was a recycling centre dedicated to the repair and recovery of various items from all over the city. It encouraged employment and economic activities, by financing training courses in management, ICT and customer services. In addition, it favored the association of local commercial enterprises in sectoral networks.

The URBACT RE-Block network focuses on the regeneration of large-scale housing neighborhoods. Ten partner cities exchange knowledge and experience on how to improve houses, public spaces, and

the social environment. Vilnius municipality joined the network in 2013 with the "Zirmunai Triangle" project, chosen for its strategic location and because it is one of the oldest and most deteriorated housing neighborhoods in Vilnius. A Local Support Group was formed by local residents and institutions to define an action plan, including new public and green spaces system, redesign of community buildings and development of ownership over the common land around the buildings, optimization of soft mobility. Overall, the URBACT RE-Block network has prompted Vilnius' government to carry out this project in a different way, involving representatives of residents and various local stakeholders to apply experiences from partner cities and test the proposals.

Providing a cooperative platform between two Swedish cities - Borlänge and Falun - the "Swedish Urban Pilot Project" aimed to persuade existing companies to incorporate environmental technology into their working practice, as well as support new business activity in areas with growth potential in the fields of ecology and energy. The medium-term goal of the project was for sustainability to become a standard concept in urban regeneration, local economy, and citizens' life. The focal point was the 'Dalarna Natural Resource Centre', located halfway between Falun and Borlänge, coordinates the cities' activities, hosts three specific institutions ('European Urban Research Park', 'Economic and Technology Centre', 'Centre for Environmental Information'), stimulates the transfer and use of environmental technology within the private sector. The project's strength is the paradigm shift that establishes the principle of environmental sustainability as a driving force for change and regeneration in medium-sized towns.

KEY ELEMENTS OF SUSTAINABLE REGENERATION

On the basis of the experiences illustrated above, sustainable urban regeneration requires an integrated and systematic approach can be summarized in the following strategies:

1) Investing in places and people: Regeneration measures invest in places and simultaneously in people. If local communities have gained enough confidence, expertise and commitment during the period of EU-funded schemes, they will move from mere participation to be at the heart of regenerating process to address future challenges. New financial instruments, such as *Neighbourhood Budgets*, motivate them to become involved in urban change with immediate benefits who take up the reins of promoting their territory.

2) Integration of policies and plans: The interventions are more effective if integrated with local and/or regional policies in the short and long term and related to strategic areas (land-use; equal opportunities; inclusion and safety; protecting the environment and responsible use of natural resources; demographical trends; training and employment; training and qualification; technological innovation and research).

3) Intersectoral and cross-scale approach: The complexity of urban development requires intersectoral measures and engagement of public and private actors to improve both the built and the natural environment, promote social cohesion and competitiveness in attracting business, enhance urban living standards. The urban initiatives go further than individual projects and geographical limits of a specific urban area, as they affect the surroundings with echoes at a regional and national level as well.

4) Cultural values and diversity: Physical heritage, traditions and knowledge of local residents are key factors in maintaining collective self-esteem and encouraging more active citizenship. Furthermore, strengthening social capital is crucial to develop the local identity and a sense of community.

5) Multilevel cooperation: A successful programme requires strong local and regional partnerships. Public resources are limited, so there is a need to secure work with the private sector to access sufficient finance and to bring in new entrepreneurial expertise to be integrated into public political know-how

and residents' local know-how. The very nature of partnerships contributes both to reinforce the horizontal dimension of policies and to enhance vertical cooperation among local, regional and national bodies, by profiting from exchanging experience of urban governance, administration, and management.

6) Attention to the environment: The urban operations contribute to European environmental objectives and guidelines, especially with regard to a reduction in the use of energy, protection of the natural environment and containment of the ecological crisis.

7) Ongoing monitoring: Ex ante, interim and ex-post evaluations should be an integral part of each development. This can then form the basis of any adjustments in policy to achieve the best use of all possible resources.

Sustainable urban development is reached only through integrated, long-term visions for cities and neighborhoods into their regional context and geared towards specific target groups. Area-based integrated plans can have a much higher impact if do not divide problems and potential along with administrational responsibilities but treat and use them in a comprehensive way. Physical regeneration has to include multiple dimensions of urban life, by putting sustainability at the core of an indispensable reunification of planning, ecology, economy, and landscape.

NOTES

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