

Opportunities for Sustainable Design in Renovation of the Stanaway Park, Dublin, Ireland

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Abstract: On a need of conception and management of ecological sustainability in urban places, arises the concept of “sustainable city”, synonymous of modern times and development. Applying sustainable design stimulates urban ecology and induces social, economic and ecological quality of life of all citizens. The “deformalization” of an urban landscape, if it may be called, can happen as we introduce green areas. Amongst others, parks, and “green roofs” are some of the means to reach urban sustainability, since they make possible the incorporation of self-sufficient and regenerative natural processes. This report presents a proposal of a landscape intervention of two typologically different spaces of public utility. Both items of the study area, Public Park and Senior citizen's complex respond to a large number of requests that can be integrated on the urban environment and the renovation concerns of the underlying concept of sustainability development.

Key-Words: Sustainable city, Sustainable design, Urban renovation, Green roof, Social dynamics, urban void, park.

1 Introduction

The explosive growth of cities and resident population aspirations towards more quality of life make it an actual necessity of a conception and management of sustainable urban places. The concept of sustainable city, synonymous of modernity, development, corresponds to healthier cities, with less noise, less contamination, more presence of vegetation, within other facts that extend towards a more social, economical and environmental quality of life for its citizens.

To endorse cities with urban parks, amongst other green areas, requires great economical efforts and future compromise for its conservation by the public administrations, or similar entities, and must be followed with actions of sensibility and consciousness of the citizen in its individual responsibility so that the urban environment can be protected and preserved.

Boehm [1] has said, "I think the future of architecture does not lie so much in continuing to fill up the landscape, as in bringing back life and order to our cities and towns." The planning and management of urban parks is important to urban sustainable development [2]. Urban Parks have significant ecological, social and economic

functions, thus, the future new lifestyles will lead to higher demands for sustainable urban parks [3].

The present work presents a proposal of a landscape intervention of two different typological spaces of public utility. Both items of the study area, Public Park and Senior citizen's complex, are integrated on urban environment. Renovation concerns and the underlying concept of sustainable development are discussed.

2 Sustainable cities

The concept of urban sustainability was officially defined by the UNECD – United Nations Conference of Environmental and Development), in 1987 [4]. It is described as “a process of change in which the use of resources, the direction of investments, the orientation of technological developments and institutional changes are all in harmony with each other”, the aim of which is not only to meet present day needs, but also to ensure future generations “will be able to live as they would like to live” [5]. This means that the actual generation needs must be satisfied without compromising the capability of future generations satisfying their needs [6]. Cities must try to solve their problems, recognizing that they themselves can

achieve potential resolutions, without transferring them towards other scales, or different locations and future generations.

Prevention, re-utilization and recycling may be the answer of efficient resource consumption. Energetic and clean systems can benefit the skills of cities and their buildings; a sustainable project can reduce urban environmental impact. With knowledge of these ecological regenerating urban systems, partnerships, local authorities, enterprises and the involvement of local populations these goals can be achieved.

3 Urban Parks

3.1 The role of Urban parks

It is argued that urban parks and green spaces are of a strategic important for the quality of life in a growing urban society. Chiesura obtained results regarding people's need to experience nature [7]; people visit the park primarily because they want to relax, to escape from the stressful rhythm of the city, to obtain freedom, beauty and silence.

As concluded in the study of Chiesura "First of all, urban nature fulfils many social functions and psychological needs of citizens, which make urban nature a valuable municipal resource, and a key ingredient for city sustainability. Secondly, different age groups have different motives to visit the park and different activities they are going to undertake. Park design and management should take into account all groups recreational requirements [7].

Historically, urban parks responded to social problems and expressed various ideas about nature, but they showed little concern for actual ecological fitness [8].

3.2 Sustainable Urban parks

A classic study of urban parks described four types of parks [8]; the Pleasure Ground (1850 – 1900), the Reform Park (1900-1939), the Recreation Facility (1930-1965), and the Open Space System (1965-?). Each of them corresponds to social issues, not ecological ones.

Cranz and Bolard [8] consider that the Sustainable Park began to emerge in the late 1990s and postulates three general attributes:

- self-sufficiency in regard to material resources and maintenance,
- solving larger urban problems outside of the park boundaries and
- meeting new standards for aesthetics and landscape management in park and other urban landscapes.

A functional network of green space is important for the maintenance of the ecological aspect of a sustainable urban landscape. Landscape connectivity should be promoted with the development of greenways and use of autochthonous species, adapted to local condition, with low maintenance cost, self-sufficient and sustainable [8].

In addition, the use of native plants, restoration and of streams or other natural systems, wild life habitat, integration of appropriate technologies or infrastructure recycling, and sustainable construction and maintenance practices would emphasize the ecological value of this model of what is a Sustainable Park.

Throughout a good planning, management and sustainable design practices we can obtain excellent results in a Sustainable Park, with less work, less implementation costs and simultaneously we can manage to fulfil special needs for all.

4 The Stanaway Park case study

With the general theme "Sustainable city and new public spaces" and more specifically the local theme "Local mutations - intensifying", the study area proposed for the European 9 [9] in Dublin is composed by two very different, but common, urban situations. On one side there is an open, public green/natural area The Stanaway Park, that occupies 8 hectares and on the other side we find a private senior citizens complex Lorcan O'Toole adjacent to the park that occupies approximately 0,78ha, made of four multi-apartment blocks. Completing the urban scenario a typical suburban composition of individual two storey housing units are connected by a network of local access roads.

4.1 Localization

The city of Dublin is the urban centre for the Greater Dublin Metropolitan Region. The study area lies in the south-western of the city and is an underutilised site in a traditional suburban area, is located in the urban center of Crumlin, 7km from the centre of the city of Dublin. The site is surrounded by predominantly two storey dwellings built in the 1950s and 1960s. The site of project at Lorcan O Toole Court is a typical example of an obsolete typology (bed sit accommodation). Despite the obvious typological differences, both situations are very similar as they are currently outdated and underutilized, to a point where they almost become urban voids, not in the literal sense of course, since they are still in use, but more in the sense of an underlying numbness leading to a lack of specific

character and as an end result, failure to respond to the contemporary context solicitations (Figure 1).



Figure 1-Aerial view of study site, Stanaway Park, Dublin Photograph: EUROPAN9.

4.2 The concept

The concept behind this study had to do with the need of getting together –meetings, and connectivity – for nature and humans, ecology and culture, land and people are represented by the “HOT SPOTS”. These are linked by combined corridors with alternative circuitry networks that permit movement and inner connection of all species (Figure 2).

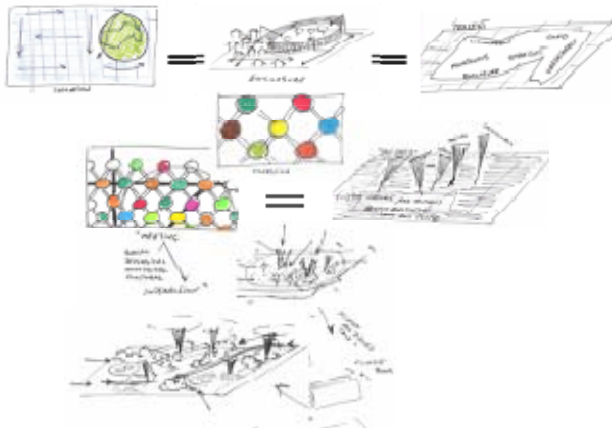


Figure 2-Scetches and draws that represent the initial design thinking that gave origin to the hot spots concept.

4.3 The proposal

The proposal here presented sets out to redefine the urban presence and orientation of both items of the study area, Senior citizen's complex and Public Park, by providing a more open relationship with the adjoining streets and housing units, reinforcing the existing pedestrian circuits, introducing new ones and reorganizing the relationship between public and private areas, all this of course while articulating the new program expectancies (Figure 3). Because of

this, “Intensifying Social Dynamics” was the chosen theme for this project.

4.3.1 The Stanaway Park

Having in mind the characteristics of a Sustainable Park, the idea was to attend to the requested program while crossing the activity areas with the newly defined or suggested walkways that are the basis of the zoning plan for the park.

The overlaying of these structural elements create junctions and define what we call meeting points symbolized by colored landmarks that are associated with a specific function aside from the reference point that they naturally provide. They, in fact, are considered the “HOT SPOTS”. Those meeting points are social gathering areas specifically oriented for different age groups and activities being sufficiently apart not to interfere with neighbouring functions.

The necessary seclusion of those different areas will be provided by shifting densities and scales of vegetation elements and in some cases by topographical incidents (i.e. the circular amphitheatre will be assured by a stepped depression).



Figure 3-Master Plan for Stanaway Park and Lorcan O'Toole complex.

The proposed shifting vegetation structure with consistent coherent planted clusters ensures a diversity of habitats and scenarios across seasons, being in some cases more oriented for the preservation of wildlife clusters and in other cases more adequate for human use, guaranteeing in any case the peaceful coexistence of both presences.

In addition to the proposed European 9 building program for the park the introduction of a small coffee/tea house was suggested and a small enclosed multi-purpose gymnasium suitable for the diverse activities that cannot be undertaken in the exterior in poor weather conditions. Those two additional functions can serve as a complement to the

remainder of possible activities to be developed in other areas of the park, providing an alternative social space.

4.3.2 The Lorcan O'Toole complex

The main guidelines towards the development of each individual built unit in the Lorcan O'Toole were to assure, in all cases, their use by occupants with reduced mobility, being all units suitable for electrical wheel chair use and adequate solar exposition and natural ventilation in all habitable rooms. Social care unit, housing units and foot circulation paths also provides the perfect meeting point for intensifying social dynamics.

4.3.3 Green roofs

Accessible rooftops – green roofs (Figure 4), are introduced at Lorcan O'Toole's proposal in each individual unit as alternative meeting points for those who wish to, where small individual gardens can be grown and serve not only as occupational and interaction therapy, but as an ecological benefit as briefly described above.



Figure 4 –Green roof proposal for Lorcan O'Toole area of the Stanaway Park, Dublin.

A contemporaneous tendency of adopting architecture and landscape design is an emergent reality, and “Green roofs” (roofs with vegetated surface and substrate) is an example of this integration [9]. The ecosystem services investigated to date and provided by green roofs, include improved storm-water management, better

regulation of building temperatures, reduced urban heat-island effects, and increased urban wildlife habitat [10]. Green roofs are used in hot countries to combat the urban heat island effect and in cold countries to filter and store storm water on site, thus, to not overload the sewer-wastewater system.

Roof gardens, the precursors of contemporary green roofs, have ancient roots. The earliest documented roof gardens were the hanging gardens of Mesopotamia, considered one of the seven wonders of the ancient world [10, 11]. Green-roof habitats contribute to local biodiversity conservation and provide aesthetic and psychological benefits for people in urban areas. Even when green roofs are only accessible as visual relief, they contribute to stress relief [12]. Other services of green roofs include urban agriculture (food production with economic and educational benefits) and air pollution and noise reduction [13].

5 Concluding remarks

It seems clear that the role of Urban Parks, and more actual, the Sustainable Parks are one of the challenges of this century, not only of human interest, but it is one more necessary step towards a more sustainable future towards our cities and planet.

The interpretation of the local natural and cultural environment, standing out the values of sustainability in all daily tasks, including the chosen plant species, maintenance practices, the use of material resources, and recycling, is part of the ecological education and must be evident for the user.

When it comes to construction and use of sustainable buildings, “green roofs” also have an important role as urban ecosystems. Their potential benefits include amongst others - storm water management, energy conservation, elderly occupational, interaction therapy and urban habitat provision.

Programs that nourish the public participation and their support can be very helpful when we must change attitudes, and ethic. These accompanied with new policies and economical practices are fundamental. Only then we can guarantee that our world, in a more vast way, becomes truly sustainable.

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