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THE CONTRIBUTION OF DESIGN TO THE SUSTAINABLE DEVELOPMENT BY THE TRANSFORMATION OF "NON-PLACES" IN URBAN GARDENS FOR PRACTICING URBAN AGRICULTURE

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ABSTRACT

The growing pressure on natural resources and increasing global trade have made sustainability issues a prime area of concern for all businesses alike. With the focus on sustainability, a project of an urban vertical garden was conceived for the practice of organic urban agriculture. Innovative forms of green urban vertical gardens aim to combine food, production, design and the use of unused spaces "non-places" in urban dwellings.

The results are based on an analysis of documents published in accessible international resources related to urban vertical gardens, with the objective of developing a new concept of garden that can be foldable and that can fit in different typologies of spaces, taking advantage of natural resources typically for promote the practice of urban agriculture. It will be an important stimulus for the production of controlled plant foods. It promises environmental benefits resulting from the design and development of a product that includes new technologies and the choice of reusable materials.

Keywords: sustainable development, urban gardens, design, product development.

INTRODUCTION

Urban development, burgeoning population and rapid urbanization (Astee, 2010) have contributed to two challenges facing cities today, and the consequent increase in public buildings and works make evident the scarcity of local environmental resources, putting biodiversity at issue. The degradation of these resources has raised considerable concerns in the scientific community, the political system and environmental associations.Various cities are starting to recognize urban agriculture as an integral part of urban planning (Dubbeling, 2011), upgrading and design. Housing design can take into account (micro-)farming requirements like designing houses in such a way that they can accommodate growing on exterior walls and window sills; designing balconies to maximize solar access or with growing containers already built into them, etc. Scientists warn of the harmful effects of human intervention on the planet, stressing that natural disasters are the result of a number of options taken. The planet reacts as an organism to everything we do, because everything that surrounds us is inhabited by organisms essential to life on earth (Andreoli, 2017). Increasingly, therefore, the criteria for planning natural resources, such as housing, are taken into account for the preservation of ecosystems and biological diversity, thus ensuring sustainable construction based on eco-efficiency, promoting environmental, social and economic awareness (Florim and Quelhas, 2004). It is a characteristic of the human being to explore the world, extracting from it everything it needs to survive. The problem is that many

of the most productive forms use poisons and fertilizers to obtain higher yields, damaging biodiversity and the planet in general (Sorrentino, Trajber and Mendonça, 2005). The concept of sustainable development implies respect for nature, looking at it as a resource of raw material destined to the needs of the planet, but which must be explored rationally (Sorrentino *et al*., 2005). Aiming at this sustainability and the preservation of biodiversity, it seems pertinent to make use of the wasted space at the housing level, the so-called transient places or "non-places" of Marc Augé (Augé, 1994).

RESULTS AND CONCLUSIONS

With the intention of taking advantage of the "non-places" at the level of an urban dwelling, a product was conceived in the ambit of the urban gardens, for the practice of urban agriculture. This project consists in the design and development of a product, which intends to promote local biodiversity, within the framework of urban gardens. These should be vertical and they should fit into various spaces. In this way, natural resources will be used to promote the practice of urban agriculture. It will be an important stimulus to the production of vegetable food of controlled origin. The preparation of this product was realized with a help of product design which it made possible to include technologies and concepts from the visions of people who practice organic urban agriculture. The concept of a vertical urban garden was proposed, as well as, alternatives solutions, as shown in Figure1.

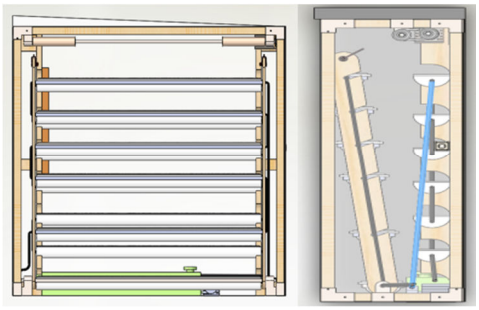

Fig. 1 - Vertical model of a vertical urban garden for the practice of urban agriculture

Social advantages include improving family food security, waste of food and reuse of unused space. For some applications, the necessary technologies are known, but have not been combined in this way before.

In conclusion, this product will be seen as an innovative solution that has some potential, together with a population increasingly aware and concerned about healthy eating habits.

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