

PERMACULTURE CONCEPT IN 3 DIMENSIONAL AGRICULTURAL LANDSCAPING

CONCEPTUL DE PERMACULTURĂ ÎN AMENAJAREA PEISAGISTICĂ 3D

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Abstract. *Permaculture is a design system for creating sustainable human environments, that expands its applicability also in agricultural landscaping. Permaculture is not limited to plant and animal agriculture, but also includes community planning and development, use of appropriate technologies (coupled with an adjustment of life-style), and adoption of concepts and philosophies that are both earth-based and people-centered, such as bioregionalism. The general aim of this study is to emphasise the benefits of permaculture concept in the actual globalization context and serve as a guidepost to right livelihood in concert with the global community and the environment, rather than individualism and indifference. Whereas permaculture ethics are more akin to broad moral values or codes of behavior, the principles of permaculture provide a set of universally applicable guidelines which can be used in designing sustainable habitats. Distilled from multiple disciplines—ecology, energy conservation, landscape design, and environmental science—these principles are inherent in any permaculture design, in any climate, and at any scale.*

Key words: permaculture, sustainability, landscape design

Rezumat. *Permacultura este un sistem de design pentru a crea un mediu de viață sustenabil pentru om, care își extinde aplicabilitatea și în peisajul agricol. Permacultura nu se limitează doar la domeniile agricole, ci include și planificarea și dezvoltarea comunității, utilizarea tehnologiilor adecvate (împreună cu o adaptare a unui stil de viață) și adoptarea unor concepte și filozofii care sunt centrate pe pământ și pe oameni, cum ar fi bioregionalismul. Scopul general al acestui studiu este de a extinde beneficiile conceptului de permacultură în contextul actual al globalizării și de a servi ca un ghid pentru a trăi corect, în armonie cu comunitatea globală și cu mediul, mai degrabă, decât în individualism și indiferență. În timp ce etica permaculturii este mai asemănătoare cu valori morale sau coduri comportamentale, principiile permaculturii oferă un set de linii directoare universal aplicabile care pot fi utilizate în proiectarea habitatelor durabile. Derivate din mai multe discipline: ecologie, conservarea energiei, designul peisajului și știința mediului - aceste principii sunt inerente oricărui design/proiect de permacultură, în orice climat și la orice scară.*

Cuvinte cheie: permacultură, sustenabilitate, design peisager

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INTRODUCTION

Bill Mollison and David Holmgren, founders of permaculture concept in 1970, have defined permaculture as a design system to create a sustainable human environment (Mollison, 1979).

The present work have a serie of objectives as it follows:

- building a model of permaculture in Moldova region,
- involvement of the three axes of the 3D agricultural landscaping (plants, environment, and human),
- involving sustainable agriculture practices and land management techniques and strategies from around the world, forming a bridge between traditional cultures and emergent earth-tuned cultures.
- studying and systeming the literature on this subject,
- increasing surfaces cultivated with fruit growing species,
- expansion of urban green areas by using roofs as spaces suitable for landscape design.

With world population growth has increased and will further increase the demand for agricultural products which are the basis of human food. It is known that in agriculture in general and fruit growing, in particular, cultivar, by its superior qualities, is the main means of production. Diversification of the research in this area and finding new techniques for obtaining more efficient and rapid production of a higher quality is one of the current priorities of food safety programs. Through its objectives interdisciplinary work involving advanced methodologies, this research contributes to the development of knowledge in the field. Originality can be expressed through the expansion and diversification of bush culture methods (especially the strawberry) in the context of capitalization terraces. Green roofs represent a way of landscape development that combines aesthetics with ecological functions of these types of facilities, offering space for extending the strawberry culture.

MATERIAL AND METHOD

The general aim of this study is to emphasise the benefits of permaculture concept in the actual globalization context and presenting a permaculture example in 3 dimensional agricultural landscaping.

The 3 D-s involved in project's concept are refering to: Human aspect, Agricultural environment and Social context.

All humans have the same basic needs – to be safe, secure, have enough to eat and have a happy life, in harmony with the environment, either natural or agricultural, all aspects leading to a balanced society that meet the needs of all humans.

The site is under continuous development and with ever changing and evolving on ground research in practice; work is consistently in progress to develop more efficient and productive systems.

A project that involves two families that share the same vision, to live and to raise their children in a beautiful safe environment and to cultivate their land and to enjoy life fully.

Located on a residential district, Arcașilor Street, Galați, the aim of this project is to transform the previous location into an abundant garden, where the inhabitants and nature itself can thrive. So far, this process has come to transform the human

aspect, filling them with passion for what they are doing and giving them great joy. The aim is to share this experience with more people and make a real, strong positive change in the present society.

The strawberry culture is just a part of the production system. The project has a vegetable growing sector and an orchard. The production obtained covers 65% of the two families needs.

In figure 1 are presented different aspects during project implementation. The culture substrate involves different layers that ensures permeability and isolation. The upper layer is forest soil.

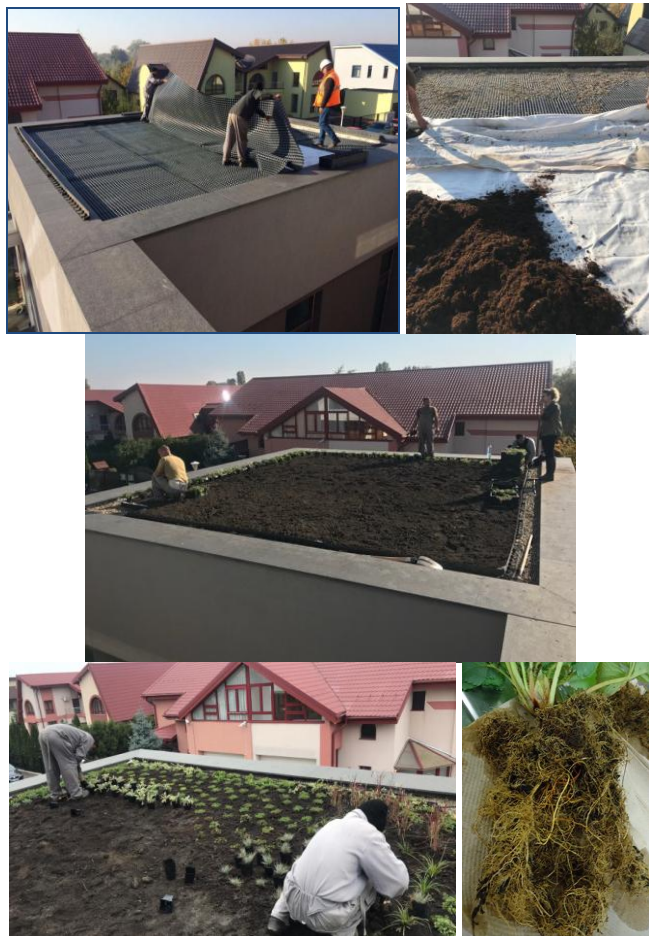


Fig. 1 Different stages of project implementation

RESULTS AND DISCUSSIONS

Permaculture is about designing and combining ecological human habitats with food production systems. This paper discusses on permaculture concepts and their applications, and offers listings of resource organizations and references on permaculture.

The social and economical context and environment quality. Permaculture is not limited to plant and animal agriculture, but also includes community planning and development, use of appropriate technologies (coupled with an adjustment of life-style), and adoption of concepts and philosophies that are both earth-based and people-centered, such as bioregionalism (Mollison and Holmgren, 1987).

The Ethics of Permaculture. Permaculture is unique among alternative farming systems (e.g., organic, sustainable, eco-agriculture, biodynamic) in that it works with a set of ethics that suggest we think and act responsibly in relation to each other and the earth.

The ethics of permaculture provide a sense of place in the larger scheme of things, and serve as a guidepost to right livelihood in concert with the global community and the environment, rather than individualism and indifference.

Care of the Earth - includes all living and non-living things—plants, animals, land, water and air.

Care of People - promotes self-reliance and community responsibility—access to resources necessary for existence.

Setting Limits to Population & Consumption - gives away surplus—contribution of surplus time, labor, money, information, and energy to achieve the aims of earth and people care.

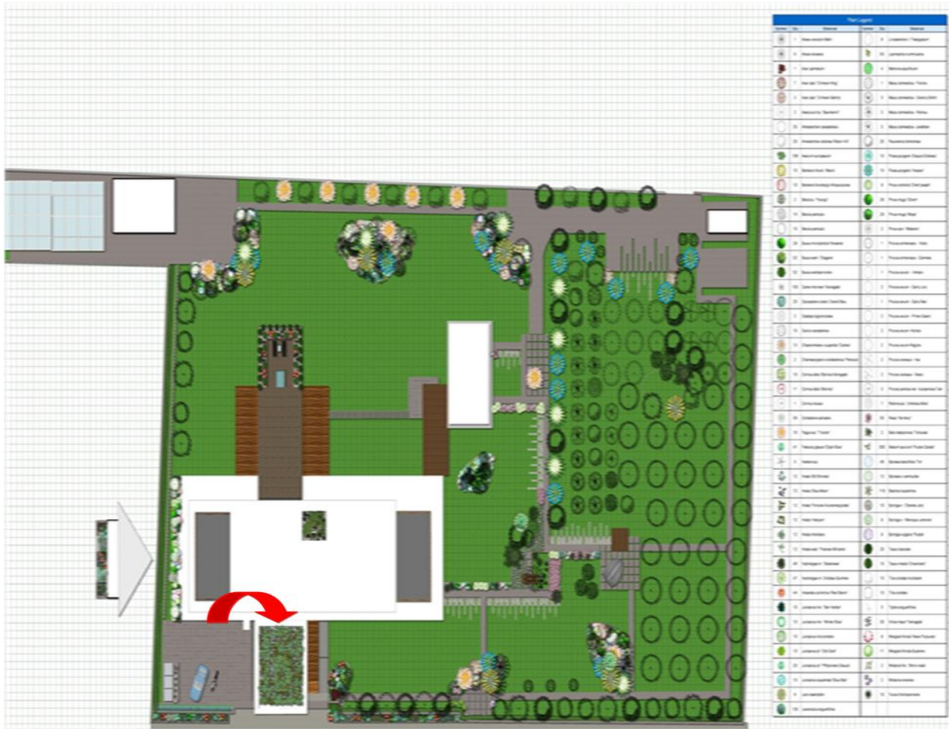


Fig. 2 The general plan of the site

The Principles of Permaculture Design Whereas permaculture ethics are more akin to broad moral values or codes of behavior, the principles of permaculture provide a set of universally applicable guidelines which can be used in designing sustainable habitats. Involving multiple disciplines—ecology, energy conservation, landscape design, and environmental science—these principles are inherent in any permaculture design, in any climate, and at any scale.

- Relative location,
- Each element performs multiple functions,
- Each function is supported by many elements,
- Energy efficient planning,
- Using biological resources,
- Energy cycling,
- Small-scale intensive systems,
- Natural plant succession and stacking,
- Polyculture and diversity of species,
- Increasing "edge" within a system,
- Observe and replicate natural patterns,
- Pay attention to scale,
- Attitude.

The sustainability of this approach lies in combining economic, aesthetic and functional aspects, especially of such areas, making them the primary aspects anchored in determining the choice of the most suitable crop systems.

Fruit trees with ornamental value are well represented by a great diversity of species and varieties that find, in our country, favorable climatic conditions for growth and prosperity, while ensuring decor spread throughout the year (Iliescu, 2005). For strawberry, there are developed many culture methods that have dual role: ornamental and economically.

Extending the concept of green roof has advantages in terms of encouraging environment, educational system and the community life, fostering solidarity population to achieve a framework for proper management of long-term spaces.

Inside the cities, these interventions lead to remodeling phenomena aimed at increasing the quality of life of the inhabitants, reunified under the name of urban regeneration.

CONCLUSIONS

Observations and researches have concluded that implementation of the concept of permaculture can be very successful, both in the short and long term, primarily by reducing pollution and improving the aesthetics of space designed and also including fruit production.

Promoting the concept of permaculture in conjunction with the already existing model of "green roof" and "garden on the roof", aims to promote new ideas untapped production at full capacity so far in our country. This involves the

use of these innovative concepts, such as an ongoing process of communication, information and advice noteworthy.

The originality of the proposed theme can be expressed through the expansion and diversification of methods of systematization urban green spaces in Romania by including tree species (strawberry) in design and exploitation of the full potential of urban spaces less exploited.

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