Journal of Architectural Engineering Technology
ISSN: 2168-9717
Short Communication Open Access

# Landscape Ecosystem as a Foundation for Architecture: An Example from Malta

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## Abstract

Landscape ecology has the potential to help landscape architects take a more holistic approach. Such an approach can simultaneously inform, guide, and inspire designers to create environmentally sustainable landscapes that are also culturally and aesthetically appropriate. This paper examines two potential ways for landscape ecology to advance landscape architecture: (a) by providing a holistic and dynamic framework that contributes to an alternative landscape design (e.g., ecological landscape design); and (b) by establishing scientific knowledge (e.g., landscape heterogeneity, biological and ecological diversity, and ecological networks) that can inform the design process at the local and regional levels.

**Keywords:** Landscape architecture; Landscape ecology; Civil engineering

## Introduction

Ecology has increasingly provided the scientific foundation for understanding natural processes, managing environmental resources, and achieving sustainable development in the 100 years since its inception. Ecology's association with the environmental movement popularised the science and introduced it to the design professions by the 1960s (e.g. landscape architecture, urban design and architecture). [1, 2].

## Materials and Method

Ecological landscape design incorporates input from landscape ecology and design, which are viewed as parallel and complementary, albeit different methodological approaches. Landscape ecology, as a science, provides an analytic and descriptive understanding of existing landscapes, whereas design's intuitive and creative problem-solving abilities prescribe alternative paths for future landscape development [3].

Malta, with an area of 290 km2, is the largest of the Maltese archipelago's three islands. Malta has the world's second highest population density, with an estimated 350,000 people. The economy is heavily reliant on tourism, a trend that is expected to continue as tourism is expected to contribute even more to GDP and foreign exchange earnings by the end of the century [4].

The concepts of biological diversity conservation, landscape heterogeneity, and overall ecological diversity serve as the foundation for assessing the five ELA discovered at Bahrija. Biodiversity and landscape heterogeneity are closely related to habitat distribution and patch and corridor analysis [5, 6].

Bahrija's landscape exemplifies total biological, ecological, and cultural landscape diversity, encompassing beautiful and valuable semi-natural and agricultural landscapes. Furthermore, because suburban development has generally concentrated in and around the towns of Malta's east coast, and because protective legislation restricts the development of selected natural features (coastal ecosystems and ravines) and archaeological features, it is relatively unaffected by contemporary development [7, 8].

## Conclusions

An ecological landscape design approach, guided by the holistic perspective of landscape ecology and informed by its scientific knowledge base, provides three major benefits. For starters, it shifts the designer's perspective of landscape away from visual attributes and toward a more dynamic and comprehensive perception. As a result, priority is given to understanding and protecting ecosystems and ecological processes, thereby conserving and ensuring Eco diversity. [9, 10].

## Acknowledgement

My sincere thanks go to Dr. S. Haslam for kindly discussing various aspects of Maltese ecology and for her comments on the manuscript, Demicoli Architectural Consultancies for inviting me to contribute to the Bahrija Project, and Reem Zako for her invaluable assistance.

## Potential Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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**Received:** 03-Feb-2023, Manuscript No: jaet-23-88833; **Editor assigned:** 06-Feb-2023, Pre-QC No: jaet-23-88833 (PQ); **Reviewed:** 20-Feb-2023, QC No: jaet-23-88833; **Revised:** 22-Feb-2023, Manuscript No: jaet-23-88833 (R); **Published:** 28-Feb-2023, DOI: 10.4172/2168-9717.1000323

**Citation:** Nicolson D (2023) Landscape Ecosystem as a Foundation for Architecture: An Example from Malta. J Archit Eng Tech 12: 323.

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