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Ergonomics and Sustainable Design: A Case Study on Practicing and Teaching

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Abstract

This paper, which stems from a larger research project, focus on the important role played by ergonomics within the conceptual design process, through the case study Daciano da Costa. We intend to disseminate among the international scientific community Daciano's developed work underlining the importance he conferred to ergonomics in design process, throughout his teaching career and his professional practice. Daciano conceived numerous interior and product design projects of outstanding quality from the early 60's onwards until 2003. His work made him one of the most relevant figures of the twentieth century Portuguese Design. We'll focus not only on his studio work, but also on his work as a teacher at Lisbon Technical University where Daciano created, in 1991, the first undergraduate Design degree in Portugal. As a professor, one of his main concerns was the student's recognition of the importance of ergonomic factors when designing, developing and supervising the exercises he set. In those days, Daciano brought innovation to the practice and teaching: a modernization of processes, a new perspective on the emerging themes of design such as ergonomics and sustainability. He believed that designing was providing a service. This task was understood as the building of a relationship between the object and the users. Throughout his carrier, both as a designer and as a teacher, he contributed for a holistic approach to ergonomics implementing a broad understanding of its full scope in order to design safe, effective and productive work systems. He implemented a design process which deals with sustainability and social commitment, searching for simple long-term solutions that could last and fulfil human needs, causing minimum material waste.

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1. Introduction

We can't speak about Portuguese Design without referring Daciano da Costa. He was one of the pioneers of industrial design in Portugal. Daciano's interior design and equipment projects followed the ergonomic and sustainability values. He has played a pioneer role on design's theory fundamentals in Portugal and an important pedagogic role as teacher.

In 1991, Daciano created and implemented the Design Course Plan at the Faculty of Architecture, Lisbon Technical University, being its coordinator since then until 2003.

Daciano's teaching method was remarkably operational, within a wider understanding of ergonomics and how to apply within a wide range of design solutions. As a professor when conceiving, developing and supervising the exercises he set, the student's recognition of the importance of ergonomics and sustainability were one of his main goals. For him good design should last, solving relevant problems, giving form to common useful objects, following a user centered design approach and with ergonomic perspective.

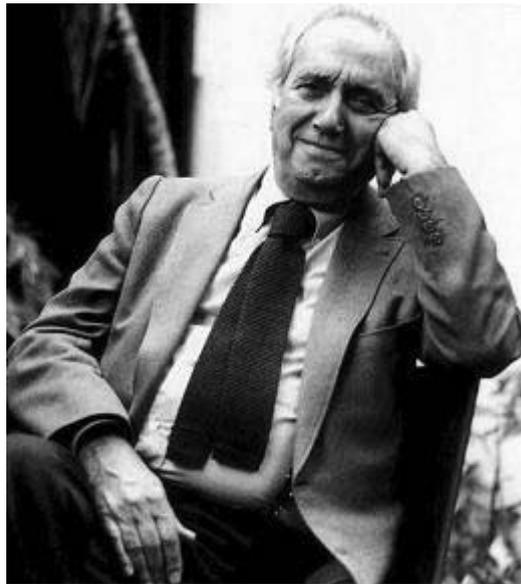


Fig. 1. Daciano da Costa (1930-2005).

2. Daciano's Practicing and Teaching

Daciano da Costa stated that "man is the real protagonist of space" [1]. He was concerned with the design of systems in which people carry out work.

According to Cushman & Rosenberg [2], product design is the process of creating newest and better products for people to use. Ergonomics is responsible for the product usability focusing in the comfort, efficiency and safety.

As Osborne [3] outlines, a major role of ergonomics is to identify design issues which involve the human component of the work system.

For Daciano [1], ergonomics contributes for the design and evaluation of work systems and products, in a way to ensure that the working environment must be designed to fit people's thoughts, wishes and abilities. In the design for everyday life situations the focus of ergonomics is man.

To exemplify those issues in Daciano da Costa's work we present some of his sketches that represent a clear and direct demonstration of the importance he conferred to ergonomics in the design conceptual process, since the first

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