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The Dutch sustainable building policy: A model for developing countries?

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Abstract

This article explores the institutionalization of environmental policies in the Dutch building sector and the applicability of the current model to developing countries. First, it analyzes the transition of sustainable building practices in the Netherlands from the 1970s until today, exploring how these were originally embedded in a discourse on 'de-modernization', which attempted to improve the environmental performance of building stocks by means of self-sufficient technologies, whereas nowadays they adopt a framework of 'ecological modernization', with integrative approaches seeking to improve the environmental performance of building stocks through more efficient—rather than self-sufficient—technologies. The study subsequently shows how the current Dutch sustainable building framework has thereby managed to achieve a pragmatic and widely accepted rationale, which can serve to orient the ecological restructuring of building stocks in developing countries.

Keywords: Sustainable building; Sustainable urban development; De-modernization; Ecological modernization

1. Introduction

The building industry is responsible for a large part of the world's environmental degradation as buildings converge in themselves major indexes of energy and water consumption, raw material employment and usage of land. In order to cope with the services they provide, such as lighting, water and climate control, buildings generate considerable amounts of greenhouse and ozone-depleting gases throughout their life cycles, which will have enormous impacts on nature [1,2]. In organization for economic development and co-operation (OECD) countries, the building sector generates about half the total carbon dioxide output—the use (or abuse) of which can be greatly influenced by policymakers, urban planners, designers and engineers [3,4]. Urban atmospheric pollution related to transportation issues may also be seen as an indirect consequence of the building industry's activity, as the logic behind the distribution of buildings within urban spaces has a key role to play.

In non-OECD countries, the environmental impacts of the building industry are even stronger [5] as they also collide with public health issues, particularly in urban areas. Lax environmental regimes and structural social and economic problems contribute to unsustainable building practices, favouring the verticalization and densification of the urban space, illegal occupation of land and a general neglect for environmental care issues, and resulting in pollution, congestion, flooding, lack of proper sanitation, power cuts, lack of green areas and environment-related diseases. The unhealthy built environments in the developing world can be considered as a consequence of the uncoordinated activity of the building industry with urban strategic planning issues (such as sanitation, green areas preservation, public transportation, etc.) and of inefficient land management.

The European Community already pays substantial attention to the sustainability of the built environment and its policymaking procedures consider the impacts buildings have upon the physical, social, biological as well

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as aesthetic environments in Europe [3]. In order to ensure that its policies are based upon solid scientific and technical knowledge, several studies of the conflicts between buildings and the environment have been carried out in recent years. Energy, in particular, remains a critical problem and the European Community is keen to ensure energy security in the widest sense so that environmental damage caused by fossil fuel consumption is reduced to acceptable levels. As issues concerning sustainable building collide significantly with the energy field, sustainable building policy and energy policy are increasingly intertwined in terms of new legislation and research programmes.

In particular, partly owing to its geographical constitution and partly to its tradition in negotiated (environmental) politics, the Netherlands has become a notable example in sustainable building policymaking, despite its dense occupation and dynamic economy. Since the Middle Ages local authorities have been regulating urban pollution issues, such as waste and water emissions in expending towns. The Dutch spatial planning regulatory framework evolved until the 19th century, with the abolishment of open sewers and provision of clean water, with prescriptions including subjects such as reduction of damp and noise and improved ventilation, heating and daylight in buildings [6]. Throughout the 20th century, especially after the 1960s, and particularly since the mid-1980s, the Netherlands has been making major efforts to control the environmental impacts of the building sector, and has now achieved a sustainable building approach that has become not only widely accepted in national terms but also a worldwide benchmark [7].

The aim of this article is to review how the Netherlands has managed to develop and implement its successful sustainable building policy framework and the lessons that developing countries should thereby learn. In this review I demonstrate how policies progressed from a (rather controversial) discourse on 'de-modernization' to a more socially and economically accepted approach based on an 'ecological modernization' rationale. Drawing from empirical cases of green buildings, I argue that while in the 1970s green building solutions in the Netherlands were conceived in terms of local, contextual, low-technological solutions, usually seeking to achieve a disconnection from existing networks of infrastructure, nowadays green building solutions are conceived seeking to achieve a better environmental performance in general, regardless of their level of technology or of the degree of connectivity to main infrastructure.

After this review the applicability of the Dutch model to developing countries is discussed, where the topic of sustainable building is still rather incipient and usually does not receive proper attention by the construction industry, government or civil society. In these countries, the general perception is that internalizing environmental care practices translate into additional cost, thus reducing profits of the construction industry. As a result, the construction sector in the developing world is rather reactive, usually adopting crisis-oriented management approaches, e.g. seeking to comply with legislations, but not go beyond them. As the developing countries are still 'under construction' [5], conceptualizing correct environmental prescriptions for the activities and products of the building industry is of key importance to contribute for their long-term sustainability.

2. The evolution of the Dutch sustainable building policy

Despite its origins in the Middle Ages [6], two main periods can be considered to define the institutionalization of sustainable building practices in the Netherlands, each with distinct rationales, technological options and policy discourses. The first period took place in the 1970s, during which sustainable building solutions tended to explore options of *self-sufficiency*—or disconnectivity from the existing networks of infrastructure—prompting however a situation of conflict among the different actors involved in the building and urban planning sectors. The second period started to develop in the mid-1980s, with policies striving to improve the *environmental efficiency* of buildings, with green buildings being constructed in contexts of relatively strong connections to networks of existing infrastructure as well as in accordance with consensual policy approaches. These two periods, which I term as the 'de-modernization' and the 'ecological modernization' phases respectively, are described below.

3. The 'de-modernization' phase

The first serious concerns regarding the energy and environmental aspects of building stocks in the Netherlands took place in 1973, when the Organization of Petroleum Exporting Countries (OPEC) imposed an oil embargo against Western nations, reducing oil exports to some nations and banning it completely to the United States and the Netherlands. The embargo resulted in a series of increases in the price of crude oil, which directly reflected on the ability of the population to use heating systems in dwellings and fuel for commuting based on cheap oil in these two countries, significantly harming their economies and exposing their vulnerability vis-à-vis oil producing countries. These events brought about a growing social anxiety regarding energy security and environmental protection in the Netherlands, especially of the middle class, who eventually pushed authorities to ensure the country's energy security. As a result, these events led to a complete revaluation of the energy performance of Dutch building stocks in view of their technologies, environmental impacts and reliability on oil, favouring the search for alternative energy sources, such as solar energy. Certain groups of the civil society started to advocate 'radical change', proposing alternative modes of development and initiating a revision of consumption intensive lifestyles, which led to the completion of the first so-called eco-communities.