

## FOREWORD

The assessment of buildings has seen considerable growth over the past decade. There are well established building certification systems such as BREEAM and LEED as well as many more recent variants serving different countries. Such is the impact of building assessment and certification that few large construction projects do not come under their influence. Certification has a big impact on how buildings are designed and engineered, how they are constructed and serviced, and how they are valued on completion.

The assessment of the buildings from an environmental and energy perspective can be a complex business. It brings together many key stakeholders such as architects, engineers, constructors, clients, representatives of building users and property valuers. Both prior to construction and at the post occupancy evaluation (POE) stage, building assessment and then certification act as a catalyst to help deliver sustainable development. What started as a fairly straightforward testing of environmental performance has, in many cases, become a complex, expensive and technically demanding task. That is why this book ‘Simply GREEN: a quick guide to environmental and energy certification systems for sustainable buildings’ is badly needed. It presents an overview of all the main global and some national environmental assessment systems and sets them alongside energy certification systems such as Passive House. In effect ‘Simply GREEN’ allows those new to assessment to understand how systems work in different countries and how broadly based ecological assessment compares with those systems aimed primarily at high energy performance.

One of the most well-known and earliest assessment methods, BREEAM, started out as an environmental assessment method. It morphed into certification and has like other followers become a global standard and increasingly a brand. However, under BREEAM and other systems of assessment, energy account for only a limited share of the total credit points available. This is why, for example, Passive House and other energy assessment methods have become popular, especially with clients who want to give priority to high energy performance rather than low environmental impact and ecological well-being.

Many forms of environmental assessment have standards of energy efficiency, water conservation, comfort and air quality far in excess of national laws. Since the standards expected of environmental certification are high,

there have been three somewhat overlooked consequences. The first concerns technological innovation and design. In many cases systems of certification have changed how buildings are designed, constructed and managed and a number of well known buildings, with very high assessment ratings, now act as valuable sources of inspiration for others.

The second area is the way certification carries in its wake new skills and design methods. This is expressed in the adoption by large architectural practices of parametric design tools linked to thermal, energy, acoustic, wind and other environmental modelling software. In effect, certification has brought the design, engineering and construction fields together in the common pursuit of sustainable building. New digital tools allow energy and ecological impacts to be predicted with greater breadth and accuracy. This reduces exposure to rising energy prices or environmental litigation later, enhances the performance of the building in use, and improves the ability of building managers to adjust controls to meet changing energy scenarios.

The third consequence concerns the users of buildings. Typically, around a quarter of the aspects that are considered in environmental certification systems involve issues of indoor air quality, comfort, daylight, views, ecological well-being and public transport, and the user is thus well protected. In many cases this has resulted in buildings with excellent indoor climates which, in turn, have provided conditions for more productivity in human terms and reduced levels of absence due to illness. Even small improvements in workforce output can often more than well compensate for possible higher energy costs and investments in indoor climate technology.

Certification has had a beneficial impact on design and construction over the past decade. However, there remain one or two issues which need to be addressed. As this admirable publication demonstrates, there are many different certification systems. Some of them are widely adopted while others are tailored mainly to the needs of single countries and specific climates. The problem for an increasingly international construction industry is that local environmental assessment and certification schemes could act as a barrier to the free movement of goods and services. Conversely, to adopt a template globally can ignore the essentials of sustainability such as climate, culture and local energy sources.

In this publication I am struck by the way a complex field is reduced to simple language and straightforward principles and facts. Too often building certification is mired by excessive technical description and construction jargon. In the spirit of knowledge sharing and technological exchange,

Swegon Air Academy has served Europe's construction industry well by funding this simple GREEN guide to environmental and energy certification.

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