



Sustainability issues in the valuation process of project developments



Georg Frösch*

University of Innsbruck/Unit for Project and Construction Management, 6020 Innsbruck, Austria

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ABSTRACT

This paper presents a system to incorporate the economic benefits of sustainability into the valuation of real estate project developments. The impact is provided through the consideration of quantified sustainable qualities of buildings in the determination of the interest rate in the valuation process. Furthermore, it highlights the added value that sustainable features and the relevant certification systems bring to a project development. Using a catalogue of parameters, key parameters are identified for the specific project development to be valued. These parameters are then quantified by means of distribution functions and checked for interdependencies. This analysis, and with it the results of a sustainability valuation, are incorporated into the calculation of the market value and the internal rate of return. Results are communicated according to the input data through distribution functions. The valuation system makes investment decisions easier to understand and emphasises the positive impact that sustainable features can have on the economic success of real estate projects.

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1. Introduction

The prolific use of the term “sustainability” by the media and even more so by the advertising industry has turned it into a word which for many people has become no more than a marketing tool or a catchphrase. Yet the basic values that stakeholders, especially in the building industry, ascribe to the term are vital to the continued existence of our society: sustainability describes actions that do not compromise the ability of future generations to meet their own needs. The real estate industry has recognised this fact and has developed a number of certificates designed to help measure and implement sustainability. Nevertheless, the economic success of a property will always come first for investors.

The foundations for this success are laid at the start of a project, in the project development phase. Decisions taken at this stage are often not based on actual data, but on the experience and the intuition of the project developer. This makes it hard later for the stakeholders to understand the reasons behind those decisions; the process appears opaque. It is important, therefore, to find a way to include the sustainable features of real estate in the early stages of project planning and at the same time to achieve a balance between the sustainability and the economic success of a project. Other aspects that are often neglected in favour of investment costs are the follow-up costs and the life-cycle costs. When evaluating

the estimated costs of a project in the early stages of planning, each cost assessment relies on forecasts. However, people often forget that forecasts are not always accurate; instead, they tend to treat those numbers as deterministic values.

This paper aims to propose a model for the valuation of project developments under consideration of sustainability issues that provides the basis for informed decisions. The result is a systematised and transparent valuation model for project developments which will help to provide a sound and comprehensible basis for investment decisions and optimisations in the planning process. As a basis for the valuation model, a sustainability evaluation created for the project in addition to the data relevant for the project development is used. All project-relevant parameters from the sustainability certificate are contained in the valuation – including “soft”, not directly measurable factors. Another intention of this paper is to show that sustainability adds value for all stakeholders. A positive correlation between the economic success of a single project as part of the real estate industry and the fulfilment of sustainability criteria will be illustrated, which constitutes a win–win situation for all stakeholders.

2. Sustainability in project development

Sustainability and sustainable development are today firmly anchored in politics, society and in the minds of the people. Efforts are being undertaken in many areas to implement the idea of sustainability. This is also true for the construction and real estate industry, which is at the forefront when it comes to topics such

* Tel.: +43 512 507 63103; fax: +43 512 507 63199.
E-mail address: georg.froech@uibk.ac.at

as the responsible use of resources, waste management and other issues relevant to sustainability. The following quote clearly illustrates the importance of sustainable building:

Sustainable building means . . . constructing and preserving buildings which, instead of being an inherited liability, will prove to be an asset for generations to come. [1, p. 221]

As the real estate industry produces objects that will be in use for at least decades, if not centuries, it must carefully assess the whole life cycle or usage period of any building being constructed [2, p. 48 ff]. Building sustainably, in a way that makes a building fit for the future, means fulfilling all ecological, economic, sociocultural, functional and technical requirements now and in the near future, cf. [3, p. 8].

2.1. The significance of sustainability in the real estate industry

Over the past years, sustainability has become an integral part of the real estate industry. However, the added value of sustainability is different for each of the stakeholders. From an economic point of view it is important to ensure low operating costs and good value retention, while a positive ecological performance is seen as an intangible additional asset. Others, especially international investors, increasingly view property certificates as a good way to assess the quality of the object. Marketing provides another incentive for building sustainably. Recent studies have shown that sustainable properties have a higher sales potential than other buildings. In February 2012, the German bank “Deutsche Hypothekbank” published a paper entitled “Sustainability in the real-estate industry”, which discussed the significance, the goals and the implementation of sustainability. The paper calls sustainability a social “megatrend” which influences people’s living conditions and behaviour. It cites mass production, electrification and globalisation as megatrends of the past. Sustainability has developed into a competitive factor due to its positive economic impact, its efficient use of resources and the eco-friendliness of sustainable buildings. This constitutes an advantage for investors, owners and users at the same time. All the above-mentioned factors have led to the establishment and growing recognition of sustainability certificates in the recent past, cf. [4, p. 5 ff].

2.2. Sustainability certificates

2.2.1. Objectives of sustainability certificates

The aim of sustainability certificates is to transparently and publicly detail the sustainable features of a building as well as to create economic advantages for property developers and investors. When it comes to direct competition and to decision making in the course of a project, it is important to be able to measure individual sustainability aspects [5, p. 6]. As well as serving as indicators for sustainability, certificates also act as important planning and optimisation tools.

2.2.2. The ÖGNI/DGNB system as a valuation basis for project developments

Valuation systems and their certification labels are now used on an international level, with some of them also catering to differing national standards. The most widely known of those systems are the British BREEAM system and the American LEED system. In German-speaking countries, the most popular system is ÖGNI/DGNB. It is also referred to as a “second generation system” because of its holistic approach to both time and topics. Most certificates divide the valuation areas into three main groups: ecology, economy and social issues. With three additional groups – technical quality, process quality and quality of the location – the ÖGNI/DGNB

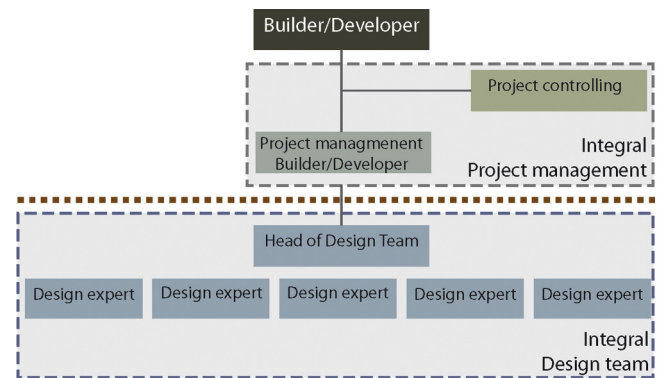


Fig. 1. Organisational structure for integral processing [7, p. 87].

system provides a comprehensive set of data for valuation, which for example already includes life-cycle costs.

By looking at individual criteria, it becomes clear that there is a lot of common ground with the goals of project development, mainly when it comes to the economic criteria of life-cycle costs and value retention. But also other criteria linked to the topic of functionality play an important role, such as space efficiency and conversion capability. At the same time, the valuation system enables us to rate so-called “soft factors”, for example the flexibility of use, using checklist points.

2.3. Implementing sustainability aspects in the course of the project development

New concepts and measures will be necessary in the future in order to implement sustainability effectively in project developments. Some of these are integral approaches which are already being used for the development and planning of projects. Integral planning means a simultaneous development of concepts in the different design disciplines [6, p. 42 ff] as opposed to the usual way of consecutively working on one project after the other.

The authors believe that for an effective implementation and coordination of the concept of integrated planning, we need an additional concept, namely the concept of *integral project management* or *integral project controlling* (Fig. 1).

Integral project management thus meets a need arising from integral planning, namely to coordinate all stakeholders in the project as well as the design team in a holistic way. Integral project management differs from traditional project management in its focus, which lies on finding holistic and life-cycle oriented solutions and in implementing sustainability. The valuation model can be used in integral project management as a tool for improving planning and developing processes.

3. Valuation methods for project developments

The valuation of real estate, unlike the valuation of project developments, can draw on numerous standardised procedures. This kind of valuation serves various purposes and is carried out for many different reasons, but it is always a way of quantifying the economic benefit of an object without taking into account the subjective value for the stakeholders [8, p. 43].

3.1. The valuation method: basic requirements

In order to be able to choose or to draw up a valuation model for project developments, at first there has to be taken a look at how this kind of valuation differs from the valuation of real estate. Other than the pre-investment analysis, which would be useful for

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