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„Building-Passport Schleswig-Holstein“ – Supporting and Labelling Quality and Environmental Awareness in the Building Sector

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INTRODUCTION

The Institute of Ecological and Regional Development (IOER) is a research institute, which is mainly publicly funded² and with its Dept. “Housing and Building Ecology” is active in the areas of documentation, evaluation, and communication of environmental properties of buildings. Some of the key terms in this context are ‘Building Passport’ and ‘environmental labelling for buildings’. The term ‘Building Passport’ is currently being used with differing meanings. It can denote a two-paged certificate displaying the most important performance characteristics and technological data of a building - comparable with motor vehicle documents – as well as a comprehensive collection of various building-related documents (plans, calculations, lists and declarations of materials and products used, operating and maintenance guidelines etc.).

In this context, the federal state of Schleswig-Holstein commissioned the IOER to develop the basic structure for a ‘Building Passport’-scheme (Blum et al. 2001). The main target of the project was to outline an instrument which was to render both information on building quality in general as well as open a perspective on environmental characteristics and performance criteria. The instrument is supposed to provide guidance for user groups (architects, planners, clients, owners, tenants, financiers) and thereby support appropriate decision making and at the same time serve as a means for strengthening the competitiveness of extraordinary voluntary environmental performance in building practice.

This paper gives an overall view on the „Building Passport Schleswig-Holstein“, which is here considered as a toolbox rather than a single instrument. The framework and starting points of the development are explained and the core elements of the scheme presented.

FRAMING CONDITIONS AND STARTING POINTS

The development of the “Building Passport Schleswig-Holstein” was carried out in three stages: stock-taking of existing specific conditions and possible ‘anchor-points’, definition of the aims and requirements of the political players and interest groups in the building and construction industry, and finally a draft of the basic concept and development of an implementation scheme.

Existing tools and ‘anchor-points’

The political and economic conditions in Germany, (especially with the recently enacted energy saving ordinance, increasing energy prices and a tendency towards tenant-dominated

² IOER is jointly funded by the German Federal Ministry of Traffic, Building and Housing (BMVBW) and the Ministry of Science and Arts of the Federal State of Saxony. The project “Building Passport Schleswig-Holstein” was financed by the Ministry of the Interior of the Federal State of Schleswig-Holstein.

markets) along with the numerous specific initiatives and programs in ecologically-oriented construction in Schleswig-Holstein, provide a good starting point for the development and implementation of a 'Building Passport'. In particular, a committed "*Low Energy Standard for Buildings*" was included in the public guidelines for subsidised housing development of the federal state long before it became part of the general building legislation. Measures in the "*Initiative Program for Thermal Refurbishment*" attempt at supplying information as a basis for environmentally responsible action.

The "*Criteria for ecological planning and building*" published by the Ministry for Nature and the Environment of the federal state of Schleswig-Holstein as far back as 1993 are also particularly noteworthy. Irrespective of the degree to which some of the criteria today had to be revised (energetic requirements, for instance), the content of the brochure may, on the whole, be seen as a public consensus and thus provides an excellent starting point for the conception of an updated 'Building Passport'.

Expectations, reservations and requirements expressed by the interest groups

In order to achieve a high level of acceptability communication with the interest groups made up a large part of the project work. Representatives of the major institutions concerned in Schleswig-Holstein were interviewed by telephone and questioned on their opinion on issues of a 'Building Passport'. Additional information came from an earlier nationwide study (Blum et al., 1999). The results of the survey were presented as a feedback to the participants at a workshop with the aim of focussing major topics. The following essential issues were recorded for the conception of a 'Building Passport':

- the basic problem of *formulating clear goals* and the identification of target groups,
- the main focus of *quality assurance* (with integration of ecological goals and in particular goals related to health issues),
- the *simplicity* of the tool with regard to *readability/comprehensibility* as well as
- orientation on *information for the end user*.
- Regarding the issues to be included, the topics of building materials choice (ecological aspects and health issues) and energy were stressed as being most important.

Political targets

With the aim of defining the central objectives of the political players involved four typical scenarios were outlined for appropriate 'Building Passport' concepts and were presented for discussion with the advisory board of experts. The four scenarios were labelled "*Good construction Practice / Assurance of Quality*" (main focus: traditional/classic qualities in building and construction as the basis for ecological orientation), "*Ecological performance through competition*" (main focus widespread implementation and transparency), "*Ecological excellence*" (main focus in environmental policy: promoting innovation) and "*Foot in the Door*" (a combination of (low level) tools and long-term implementation).

The discussions resulted in the decision to use a combination of scenarios one and two as the primary orientation with the main target being assurance of quality. Ecological aspects were regarded as an important component of general quality in building. The implementation was to be achievable essentially through the market. Nevertheless during the discussions with the advisory board it was suggested that the "protected sphere" of the semi-public intermediary organisations be used. This suggestion referred in particular to the "Working Group of Contemporary Construction" in Schleswig-Holstein. Almost all important local institutions of the building and construction industry and housing development are represented in this association. It belongs to its core tasks to give technical consultancy for subsidised housing

projects with more than seven dwellings and check for superior quality. This situation predestines this association as a link between private economy and public players in the further development and implementation of a 'Building Passport' for Schleswig-Holstein.

Basic models

As a starting point for the design of the "Building Passport Schleswig Holstein" *three typical separate models* were drafted. These models represent the three basic components of a comprehensive approach – documentation, evaluation, awarding/communication:

Model 'Building Logbook'. Especially in the case of owners of buildings and tenants, there is a need to introduce a tool that besides presenting data on the properties of the building and archiving relevant documents also provides guidelines for operation and maintenance. As a "building logbook" it should be kept up-to-date by the user or owner, for instance with regard to resource consumption (water, energy etc.), maintenance, and structural changes. The "building logbook" itself does not include any assessment but is the basis for further modules that can be added.

Model 'Building Passport'. As inspection regulations under public law are being increasingly reduced there is a shortage in monitoring the technological properties of buildings. At the same time requirements on planning and good building practice grow steadily and the need for new forms of quality assurance achieved by means of free market tools increases. The concept of a building passport as an independent tool therefore is a good starting-point. Although buildings are not explicitly assessed, a widespread use of descriptive 'Building Passports' can lead to better market transparency by means of gradually developing a certified reference system.

Model 'Quality label'. A quality label for buildings as an element of an ambitious building and environmental policy formally puts into operation the main goals of the issuing institution – in this case the federal state of Schleswig-Holstein – with regard to a sustainable development in the building and construction industry. The quality label honours outstanding voluntary and innovative achievements concerning environmental and health aspects in building projects. As well as being effective in marketing, a label, which is awarded as publicly as possible, should also communicate best practice.

BASIC CONCEPTION OF THE "BUILDING PASSPORT SCHLESWIG-HOLSTEIN"

Integrated definition of quality

Whilst working on the project, different primary aims and requirements of the "Building Passport Schleswig-Holstein" became clear. The following aims in particular should be mentioned: achievement of widest possible utilisation (to make the application of the tool affordable!), creation of a (pragmatic) tool that is marketable ('Building Passport' as a service), achievement of quality assurance and promotion of environmentally oriented construction that also takes health issues into account. To comply with this requirements an integrated definition of quality is necessary. In detail this definition of quality in the basic concept of the "Building Passport Schleswig-Holstein" compiles the following core elements:

Quality of Building / Quality of construction and planning. The necessity for all parties involved in construction to develop an awareness of quality and sensitivity to typical weak points, especially with regard to buildings that have requirements for low energy consumption stands in the foreground. Quality in this sense denotes a reduction in the risk of shortcomings

in technical quality and cases of damages in buildings. Consultancy during the planning stage, monitoring throughout the construction process and final inspection of the building (cf. below) are central to an appropriate process.

Environmental Quality. Unlike problems of (technical) building quality, which at least can generally be dealt with objectively by means of technology and legal requirements, the definition of the environmental quality of a building heavily depends on a political (or more general: social) consensus regarding environmental aims and criteria. For this reason, the ‘Criteria for Ecological Planning and Building’ mentioned above were referred to in this project. Particularly regarding a widespread implementation, the ‘minimum standards’ laid down in this manual provide a very good starting position for development of a basic conception for the ‘Building Passport’. By listing ‘further measures’ the criteria are made dynamic: The guidelines presented are more than just the political consensus of the moment (at the time of publication, 1993) but rather include further reaching recommendations that opt as the basis for future development.

Health Aware Construction: The assessment of the degree to which a building considers health issues in a ‘Building Passport’ is methodically difficult due to various reasons. This applies both to the methodology of actual measurements and the standards used in evaluation along with the fact that well-being and health cannot be separated from individual user-specific requirements and sensitivities. Therefore, the examination of the finished building with regard to health-related issues by means of comprehensive monitoring of chemically, biologically and physically harmful substances in the ‘Building Passport’ does not appear appropriate. It would also not comply to the aim of keeping costs low. Estimation of health risks and their reduction to a minimum should be handled beforehand by measures such as choice of location, careful planning, well-targeted choice of building materials, documentation and declaration (!) (e.g. through product and material lists). Monitoring for harmful substances should only be restricted to cases of actual doubts and then be selective and well targeted.

Components of the basic conception of the ‘Building Passport’

Based on the integrated definition of quality laid down above a concept for the tool was suggested that combines ‘soft’ pragmatic elements (checklists, consultancy) with actual requirements regarding priority target areas (air tightness, energy consumption, building materials etc.). In accordance with the general aim of supporting high quality construction, this approach cannot be limited purely to documentation of the (eventually inadequate) status quo. Therefore the range of tools covers *consultancy* during the planning and *monitoring* during the construction process before entering the phases of *documentation*, *certification* and *up-dating*. It is important that the tool is not centred around control and the imposition of ‘correct’ solutions but rather around cooperation according to the principle that “two heads are better than one”. The basis for this cooperation is the approach already described, i.e. promotion of high quality construction not by means of stipulating desired characteristics of a building but rather by creating a general awareness of quality issues and especially the risks of quality failure. Experience of external consultancy in the area of subsidised building in Schleswig-Holstein shows that it is possible not only to qualify a project but also as a general rule to save costs in this process. The basic concept for the “Building Passport Schleswig-Holstein” developed as a basis for further discussion and development contains five main components (Figure 1):

1. Consultancy. The consultancy component includes an initial review, which is free of charge (clarification and discussion of project aims) and a more detailed consultancy as a basis for planning. In order to prepare detailed consultation the parties interested are handed out a “Planning Checklist”. The specification of monitoring focuses during the construction process is also discussed during the second consultation stage. The consultancy is primarily aimed at the building contractors’ architects or project managers. The participation of the client is desirable (team orientation, ‘awareness of quality’).

2. Guidance / Monitoring / Final inspection: Guidance includes one or several intensive on-site inspections during which sensitive/problematic points or building phases identified in the consultation are monitored, as well as random checks as need arises. The final inspection consists of a review of the completed building and in particular includes a test for airtightness (“blower door”-measurement).

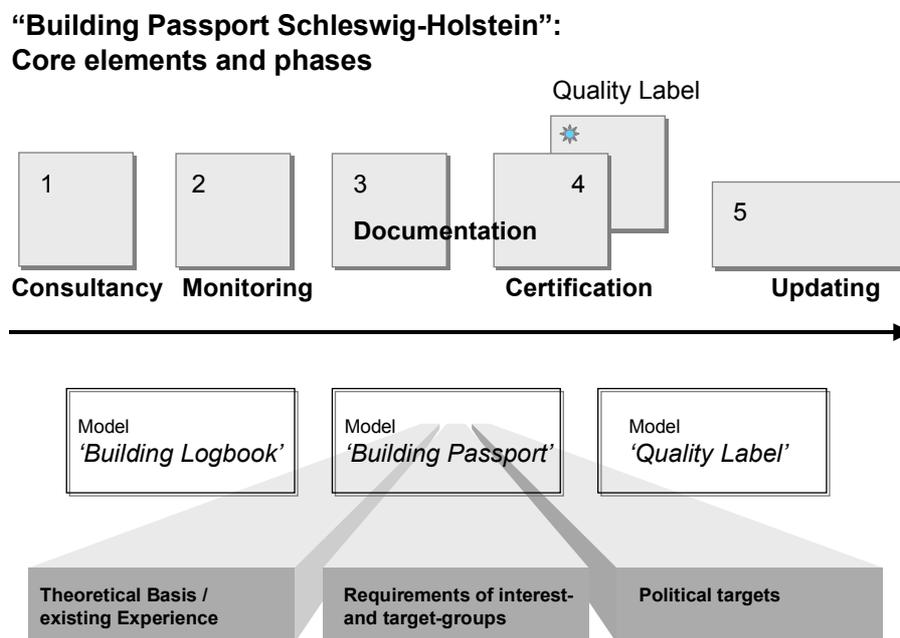


Figure 1: Basis, starting points and core-elements of the basic conception for the "Building Passport Schleswig Holstein" (Blum et al, 2002)

3. Documentation / ‘Building Logbook’. The documentation corresponds in principle to the building documentation described as last planning stage in the German federal regulations on remuneration of architects and engineers. Nevertheless it is supplemented by documents specific to the ‘Building Passport’ such as the planning checklist, records of the inspections or the list of materials used. A pre-prepared index is provided as a formal basis (‘Building Logbook’). The ‘Building Logbook’ is a supplement to the actual ‘Building Passport’ (cf. certification).

4. Certification / ‘Building Passport’; extension to a ‘Quality label’. The certification process leads to the actual issuing of the ‘Building Passport’. Certification primarily refers to the formal requirements of the ‘Building Passport’ procedure. Regarding the content compliance with the ordinance on energy saving in buildings mentioned above is a central point. In addition, fulfilment of certain criteria in the planning checklist will be checked

including the degree to which the material recommendations have been adopted. An extension of the 'Building Passport' into a graded quality label by coupling it with minimum standards regarding procedures or content is possible. The 'Building Passport' is valid for a period of four years at first.

5. Continuous Use / Updating. Structured updating and archiving of important documents and information on a building over the whole lifetime is a significant element of the "Building Passport Schleswig-Holstein". A logbook that has been kept up-to-date provides important basic information both in the case of letting or selling of the building, and in building operation in general from everyday use to modification or maintenance and renovation. Maintenance of the building logbook and updating of the 'Building Passport' is supposed to take place during and after the four years' validity and is required when applying for an extension of the passport.

CONCLUSION: SETTING A GOOD EXAMPLE

Within the basic framework for the "Building Passport Schleswig-Holstein" also suggestions for an implementation strategy were made. Beside questions like organizational structure, financing, review-process etc. as a concluding result it was also recommended to start with the implementation of the "Guideline of Sustainable Building" which was published at the beginning of 2001 by the German Ministry of Transport, Building and Housing for federal buildings (BMVBW 2001). It was suggested that – accompanying the general 'Building Passport' process – a system of environmental and quality management including a 'Building Passport' be set up for buildings in possession of the federal state of Schleswig-Holstein. This would not only incur positive environmental (and economic as the federal guideline shows!) effects but also state a good public example as a crucial signal in order to support the implementation of the general tool "Building Passport Schleswig-Holstein".

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