Sustainable properties – from visions and missions to real decisions

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ABSTRACT: Since issues like climate change, scarcity of resources or social problems in megacities have entered the mainstream media the general public became more sensitised to questions relating to sustainable development. This has also led to an intense debate within the property industry. In the past, the sustainability discourse was often focused on the contribution and role of designers and the construction and building materials industry. The rather abstract concept of sustainable development has been, at best, formally included within corporate goals and missions. In the meantime, however, the important role of private and institutional investors, banks, insurance agencies and governmental authorities is increasingly being recognised; not only by academics but also by the general public which put pressure on corporations to consider the consequences of their actions and thus, aspects of sustainable development within decision making. Consequently, a challenge exists for the property and construction industry to integrate sustainability issues into real decision making processes along the building value chain (e.g. planning, financing, insurance, valuation, rating, etc.). This requires adjusting and further developing the decision support tools used by major actors of property and construction markets and creates demand for reliable and applicable building assessment methods and tools.

Based on current trends in Europe and lessons learned in Germany the paper reflects on the transformation of property and construction markets and argues that decision making processes in property and construction are to be backed-up and supported by a ‘tool-box’ of instruments and methods based on LCA and LCC methodology. Furthermore, it is argued that market-driven forces to implement the principles of sustainable development in property and construction shall be supported by governmental and fiscal measures in order to reach market transformation effectively and quickly.

Finally, the paper provides an outlook on expected and necessary contributions from the scientific community.

Keywords: sustainability of construction works, decision making, policy instruments, standardisation, assessment methods, European perspective

1. Introduction

The role and importance of the built environment in achieving more sustainable development has often been discussed and analysed [1], [2]. On the one hand, buildings and constructed works contribute to safeguarding the material life resources and are part of society’s cultural identity. On the other hand, however, their manufacture, construction and management has a significant share in energy and mass flows as well as in impacts on the environment. Consequently, the task and challenge lies in provisioning buildings which comply with user requirements in terms of functionality and comfort, which exhibit a certain degree of aesthetic and urban design quality, and which contribute to reducing resource use and adverse impacts on the local and global environment while at the same time taking into account the individual and institutional goals and economic interests of the actors along the building value chain.

The concept of sustainable development as well as associated principles and management rules [3] are increasingly being acknowledged by numerous corporations, organisations and institutions worldwide. Furthermore, sustainability related goals have found their way into companies’ overall policies and mission statements. This trend is further strengthened through various initiatives focused on taking responsibility towards society and the environment within all corporate business and decision making processes (CSR and SRI) [4], [5]. Nonetheless, the further market transformation towards more sustainable buildings is hampered by a series of problems and questions which partially result from the construction industry’s particularities (e.g. extremely heterogeneous structure of actors along the building value chain; individually designed and manufactured buildings – i.e. heterogeneous products; relatively long product life cycle associated with numerous uncertainties, etc.). Some of these problems and questions will be identified in the following and possibilities for their overcoming will be discussed.
2. Adjusting the overall concept of sustainability to the property industry’s requirements and particularities

2.1 Complexity of the concept of sustainability

Since many years the basic questions concerning the concept of sustainability and of sustainable development have been discussed. Besides approaches of distinguishing between weak and strong sustainability [6] differences exist regarding the treatment of the different dimensions of sustainability and of their interrelations. For example, the question whether social, economic, and environmental concerns have to be treated equally and simultaneously (see the triple bottom line approach to sustainability [7]) or whether protecting natural life support systems is of utmost importance and thus, the environmental dimension of sustainability dominates the others, is still controversially discussed. But regardless of the ‘weighting’ of the three dimensions it is generally accepted that within responsible decision making each dimension has to be taken into account in terms of describing, assessing and communicating the consequences of decision making for the economy, society and the environment.

When it comes down to translating the overall concept of sustainable development to the construction sector and to single buildings different approaches or strands of research can be observed. On the one hand, the performance based building approach [8] was mainly focused on fulfilling user requirement and now extends its scope to include environmental and economic requirements as well. On the other hand, the discussion in the area of sustainable buildings is still focused on environmental and health-related aspects (green building) and emphasizes/overemphasizes the building’s energetic quality while only slowly taking into account economic aspects such as life cycle costs, development of cash flow and stability of value. In turn, investors, banks and insurance agencies are predominantly focused on issues like risk avoidance and return on investment and approach the topic of sustainability indirectly (bottom up) via issues like user comfort, third party usability, or energy costs.

2.2 Level and object of assessment

Sustainability within the construction sector is a complex and multi-faceted topic. For this reason, depending on the respective question the choice of an appropriate level (global, national, regional, entire industry, industry sector, etc.) and object of assessment (single building, building stock, behaviour of building occupants, life style, etc.) is important. In order to clarify this issue several examples are provided in the following:

When approaching the issue of sustainability in construction from an economic perspective the heterogeneous and interconnected structure of the building products, construction and property industries is problematic. For example, identifying their impact in economic in- and output accounts is a rather difficult exercise. Dedicated research studies [9] are required in order to determine the economic importance of the construction industry and its contribution to environmental and social aspect.

Nonetheless, it is of interest which economic sectors or branches contribute to what extent to energy and mass flows as well as to the resulting impacts on the environment. Respective indicators are, amongst others, energy intensity or resource productivity. From an economic viewpoint the following indicators can be of interest: capital lockup, turnover, tax revenue, and demand for subsidies or the amount of external costs. From a social viewpoint issues of interest are public welfare, provision of adequate housing facilities as well as protection of workplaces, public health and cultural heritage.

Besides the possibility of approaching the issue of sustainability via economic sectors and branches another option on economic or national level is the modelling of the national building stock. This allows analysing and forecasting energy and mass flows on the input- as well as on the output-side. Furthermore, modelling the national building stock allows tracking trends in space use and sealing of land and identifying the building stocks impacts on the environment. When carrying out such investigations it becomes evident that the buildings stock must be treated as a resource in its own right which has to be optimally managed and maintained. For this reason, in Europe preserving existing buildings while improving their energetic quality is favoured instead of constructing new buildings. Within the scope of a chinese-german research cooperation efforts have been made in also modelling the Chinese building stock in order to analyse and influence national energy and mass flows [10].

In order to demonstrate the share of resource depletion on construction and use of buildings to the general public an approach via different fields of requirements has proven helpful [11]. Thereby all energy and mass flows are assigned to different fields of requirements such as ‘construction and housing’, ‘nutrition’, ‘clothing’, or ‘mobility’. As a result, it can be shown that the share of construction and housing is approximately 30 % in Europe. Another interesting issue is the share of disposable income that has to be used for ‘housing’ by an average inhabitant.

In recent years the resource use and environmental impacts per m² living space have been reduced particularly through an improved energetic quality of new and existing buildings (efficiency strategy). However, through increases in the average area of living space per inhabitant this positive effect is partially overcompensated. Besides investigating single buildings and the national building stock investigating different life styles becomes increasingly important in order to consider and influence the behaviour of market participants as well (sufficiency strategy). Thus, ‘housing habits’ can be analysed along with mobility-, nutrition-, and leisure-habits. In contrast to investigating different fields of requirements the analysis of these habits reveals insights into the impacts of different life styles. Respective instruments in this regard are so called ‘CO2-calculators’ which can be accessed through the internet [12] and which can help shaping public opinion.
Designers and awarding authorities are normally concerned with the single building as the relevant object of interest. Methods for analysing energy and mass flows are used accompanying the design and planning stages in order to investigate and influence the impacts of design decisions on resource use and environmental impacts within the building’s life cycle. At the moment it is discussed if and to what extent the impacts of the choice of location on traffic and expenses for infrastructure have to be taken into account within the scope of sustainability assessments of buildings. The author is supportive of this practice but recommends reporting the results separately.

In order to assess economic aspects life cycle costing methods are normally applied. From the authors point of view this should be extended to also include aspects of cash flow and development of value.

Other objects of assessments are regions, settlements, quarters, building products (in the sense of providing environmental and health-related information) as well as the companies of the construction, housing, and property sector which have an interest on their part in a sustainable company development.

In summary, it can be stated that comparable assessment criteria and indicators only exist for the evaluation of resource use and the impacts on the environment. Furthermore, life cycle assessment (LCA) represents a generally accepted method which is suitable for all assessment objects and which can be applied at all levels (e.g. building product, single building, town, region, etc.); differences exist regarding the respective reference value or basis. In order to assess and evaluate economic and social aspects it is, however, required to develop and apply criteria, indicators and assessment methods that are adjusted to both the level and object of assessment and which fit to the interests and viewpoints of the specific actor concerned.

After having provided a brief interpretation of the concept of sustainability from the property industry’s point of view the question arises how sustainability issues can be integrated into property related decision making processes and how the industry’s actors can be supported by appropriate methods and tools.

3. From theory to practice – recent developments towards the transformation of property and construction markets

3.1 Further development of building assessment tools

The discussion and efforts on the further development of building assessment tools are currently focused on improving the reliability of assessment results and safeguarding scientific rigour while at the same time enhancing applicability and adjusting tools to decision makers’ requirements. Within international standardisation activities at ISO, European activities at CEN but also within the discussion on the development of a national building certification system in Germany it is now generally agreed that assessments of buildings’ contribution to sustainable development shall be based on quantitative results provided by LCA and LCC.

However, from the author’s point of view the application of many existing assessment tools does not yet provide (in an integrated and quantitative manner) building owners, tenants or decision makers with appropriate information on the impacts of their actions and decisions on the environment, on building users’ health and well-being as well as on construction costs. This restricts the possibility of increasing the actors’ motivation as well as their willingness and ability to take individual responsibility.

To date the market prefers tools that are predominantly based on qualitative information because of their ease of use (which saves cost and time) and because their assessment results can be easily applied for marketing purposes. In addition, these tools can be applied to assess existing buildings with only minor adjustments of their check-list type compiled requirements. However, their main disadvantage is that they do not provide building owners or tenants with appropriate information on the impacts of their actions on the environment. Statements describing impacts are missing, e.g. ‘tons of CO2 emission per capita, per m², per m³ and for housing purposes per annum.’ In addition, it is not possible to subsequently use qualitative assessment results for aggregation purposes at another level (e.g. community, or national building stock). In contrast, LCA based tools are capable of demonstrating the impacts of actions on the environment by using appropriate reference values.

By demonstrating how energy and mass flows or CO2-emissions are caused through individual actors’ decisions and actions LCA based tools will potentially increase actors’ motivation as well as their willingness and ability to take self responsibility. Furthermore, assessment results of LCA based tools can be used for aggregation purposes at the community or building stock level. However, existing LCA based tools have been solely focused on the assessment of new buildings at the design and planning phase or short after completion. Methodical problems exist in connection with the assessment of existing buildings (e.g. treatment of embodied energy). Another problem regarding LCA based tools is that although approaches like ‘ECoIndicators’ or ‘environmental impact scores’ exist, there is a lack of a commonly accepted method for summarizing or aggregating assessment results. In sum, there is a conflict between researchers’ claims and marketing demands which hampers the use of LCA based results for marketing purposes. A number of other instruments and tools for calculating building construction costs – on a national building cost data basis – have existed for a long time. In many cases these instruments and tools have now been extended to allow for a calculation and assessment of life cycle or whole life costs (LCC or WLC). However, due to the complexity of integrating LCA and LCC/WLC methodology only a few tools exist that allow for a combined determination and assessment of environmental and economic issues within the design and planning phase; e.g. OGIP from Switzerland and LEGEP from Germany. LEGEP is considered as
one of the ‘most rigorous science-based LCA tools’ [13, p.8].

Existing LCA based tools do not typically account for the risks to occupants’ and human health. The integration of social issues usually is limited by the lack of algorithms available (except for predicted mean vote (PMV) and predicted percentage of dissatisfaction (PPD)) which allow for an assessment of thermal comfort).

3.2 Mandatory or voluntary instruments and activities

The question whether assessing the contribution of buildings to sustainable development remains a voluntary activity or becomes a mandatory exercise required by legislators or other powerful parties (such as banks or insurance agencies) will significantly impact on the further development of assessment tools. It is currently intensely discussed if and in how far the implementation of sustainable development principles within the construction and property market can be achieved by solely relying on the ‘forces of the market’ or if it is necessary to install supplementary legislative requirements. The question is whether assessments and certifications of a positive contribution to sustainable development will continue to be issued for single buildings only or – also in order to reduce information asymmetries and to improve consumer protection – will be mandatory for all buildings.

At first glance, the answer to this question depends on different ‘cultures of decision making’ within various social and economic systems which rely on governmental influence or on market forces. However, a more detailed analysis reveals that both models currently tend into very similar directions.

Today, countries that exhibited a traditionally high degree of state involvement are now facing pressure to deregulate markets by reducing the number and scope of laws and regulations. However, deregulation implies the need to strengthen actors’ and market participants’ capacity for responsibility. This in return requires that actors and market participants are vested with appropriate information and decision support. For this reason a trends towards strengthening consumer rights can be observed in Europe. The aim of recent legislation is to safeguard consumers by providing them with information and thereby allow more responsible and informed decisions. This is to overcome information asymmetries and the interconnected problems of adverse selection. An example of this is the introduction of energy performance certificates. These certificates characterize a building’s energy quality on the basis of its primary energy demand and/or consumption. From 2006 onwards, these certificates are required for each building that is constructed, sold or rented [14].

At the same time, many governments understand they have a leading role in their capacity as a client with regard to the implementation of the principles of sustainable development. Consequently, they are making positive efforts to demonstrate and communicate that the construction and/or modernisation of federal or state-owned buildings follows these principles. A number of countries (e.g. Japan, Germany, the UK, the Netherlands, etc.) already possess guidelines on the design and assessment of new buildings as well as of the existing building stock – see for example the guideline on sustainable building in Germany [15]. These guidelines are usually supported by appropriate assessment tools. Normally, the application of these guidelines and tools as well as the publication of respective assessment results is then mandatory for state-owned buildings and construction projects. Subsequently, guidelines and tools are partially adopted and applied by the construction and property industry.

Within countries that traditionally relied more on market forces (e.g. the US and the UK) the description and assessment of buildings’ environmental qualities has been introduced on a voluntary basis in order to gain competitive advantage by signalling advantageous characteristics of the buildings offered in the market place. As the knowledge of the financial benefits of sustainable buildings becomes more widespread within the commercial property industry, coupled with a growing number of corporations, financial institutions (see [16]) and private investors involved with Corporate Social Responsibility (CSR) and Socially Responsible Investment (SRI), sustainable buildings will become more desirable property assets in future years. Thus, a link has emerged between the market value of a building and its sustainability features and related performance [17]. In addition, an intense debate is currently starting – also within countries that traditionally relied more on market forces – on how to foster sustainable development in property and construction through supportive legislative, fiscal and other instruments of governmental policy making. In this regard a recent study issued by the United Nations Environment Program Sustainable Buildings & Construction Initiative is worthwhile mentioning [18].

3.3 Sustainability assessment, rating & valuation

The application of new banking capital adequacy rules called Basel II requires banks to take a much more sophisticated approach with regard to the risks in lending [19]. As a consequence, so called property ratings will increasingly be conducted for lending purposes. The European Union of Valuers Associations (TEGoVA) has recently developed a property and market rating system which is likely to become influential for European property lending practice (e.g. the German association of public banks (VÖB) has already adopted and further developed TEGoVA’s rating system, see [20]. TEGoVA’s rating system contains four different criteria classes (market, location, property and quality of the property cash flow). The criteria class 3 ‘property’ contains the rating criterion ‘ecological sustainability’.

Unfortunately, what is meant by ecological sustainability and the issue of how to assess it is neither defined nor explained within TEGoVA’s publications. However, the rating proposal of the German association of public banks (VÖB), currently being implemented by public banks across Germany, defines three sub-criteria of ecological sustainability which will have to be assessed: building materials, energy performance and emissions. Obviously areas of further research consist in the creation of an evidence-base for the further calibration of rating systems and in the development, agreement and standardisation of rat-
Developments in the area of ‘performance based building’ can be retraced within the literature; see for example [25], [26] and [27]. The ‘performance based building’ approach has its roots in describing and assessing a building’s functionality, serviceability and the compliance of user/owner requirements with corresponding building characteristics and attributes. However, the updating of performance assessment criteria is likely to extend user demands into the realm of societal requirements (particularly environmental protection). The issue of describing and assessing a building’s environmental performance as well as other sustainability aspects are currently being discussed within the scope of the ‘performance based building’ approach.

In contrast, research in the area of ‘green building’ was focussed on the assessment of environmental and (to some extent) health-related attributes of buildings. The further development towards the ‘sustainable building’ approach led to the inclusion of economic and social aspects which resulted in a substantially widened scope of assessment criteria.

Communicating the advantages of sustainable buildings through ratings and valuations can lead to an increased demand for sustainable buildings. Another contributing factor will be the inclusion of certain sustainability issues for the calculation of credit and mortgage conditions. These will impact positively on the developers and providers of products and services in the area of sustainable construction. The use of information from existing methods, instruments and tools developed by the sustainable building community (‘green’ building rating systems, LCA-based assessment tools, post-occupancy evaluations, energy labels, etc.) can be harnessed to inform the processes of property financing and risk analysis. This will increase the demand for such methods and instruments. Consequently, the opportunity exists for the built environment research community to work together with the financial community to discuss, develop, monitor and refine these mechanisms and to use these to accelerate the market transformation for sustainable buildings.

### 3.4 Sustainable versus performance based building

Research activities concerning the areas of ‘green building’ and ‘sustainable building’ on the one hand and ‘performance based building’ on the other have developed relatively independent from each other in the past. Developments in the area of ‘performance based building’ can be retraced within the literature; see for example [25], [26] and [27].

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### 3.5 Tool-box concept

Design and assessment tools can be complemented by the use of case studies, best practice programmes, guidelines, labels, checklists, codes and regulations, building/energy passports, valuation reports, post-occupancy evaluation studies, consumption benchmarks, etc..

Examination of the relationships between these measures is necessary in order to avoid misunder-
standings and conflicts of interest. This problem is illustrated by the German guideline for sustainable building [15]. In its current form, the guideline contains a number of checklists that can be used by awarding authorities to communicate their requirements to the designers. However, the use of the checklists merely allows for a qualitative verification if the designer has met the posed requirements; without being able to assess the direct economic, environmental and social impacts of the design and/or building solution. This is only possible by making additional use of LCA and LCC based assessment tools. In this context, there is a potential for conflict between checklists and tools. Ensuring the effective interplay of checklists and assessment tools must be a goal. In this context, the job-sharing approach is meant to be a system of instruments and tools which fulfill specific tasks at different points in time and which are applied by different actors but which all share the goal of fostering sustainable development within the property and construction sector.

![Figure 2: Tool-box for Sustainable Construction](image)

The developing of a job-sharing approach, which brings together assessment tools and further instruments, seems appropriate to optimise what works best for different stakeholders.

The following suggestions are made:

Accompanying the planning phase, checklists can be used to formulate possible project goals for investors as well as to communicate possible solutions for planners and designers. Integrated tools can be used in the design/planning phase to determine and assess the impacts of design/planning decisions within the building’s life cycle. Ideally, impacts can be assessed from technical, economic, environmental and social viewpoints. Integrated tools can be used to assess the impacts of the actual design solution as well as of the actually constructed building after completion. Planning and assessment results can be transferred into appropriate communication formats. This applies to the various forms of highly aggregated assessments (e.g. labels, quality seals) as well as to the presentation of relevant information within building passports. It seems appropriate to adjust formats of communication and presentation with respect to the requirements of different groups of actors (e.g. tenants, landlords, owner occupiers, facility managers, etc.). If possible, integrated design and assessment tools should support the compilation of required documents (e.g. energy and building passports, repair and servicing manuals, maintenance plans, etc.).

Development and application of checklists are needed for the operating phase. These checklists can be based on building specific repair/servicing manuals and maintenance plans. Furthermore, checklists should include target values concerning energy and water consumption and operating costs.

Systematic data management is needed to provide feedback and monitor performance during the design phase by using data from occupancy evaluations, consumption values, cost accounting, etc. This would allow comparison between target and actual performance. Permanent storage of periodically compiled data and assessment results can be useful for various purposes (e.g. property valuation). Periodic assessments of single buildings could be integrated into management processes concerning the corporate building stock (e.g. to support portfolio-analyses).

Within the scope of the roundtable on sustainable construction at the German Federal Ministry of Transport, Building and Urban Affairs a system for organising the interplay between specialised tools and instruments is currently under development. Integrated design and assessment tools have an essential role in describing and assessing the performance of buildings over their entire life cycles. In general, assessment tools provide building related information at selected points in time. The shift towards building related data collection and analysis accompanying the entire life cycle requires developing and installing building information systems, using database structures and integrating existing instruments and measures into a ‘job-sharing’ system that allows permanently monitoring single building’s contribution to sustainable development.

In summary, sustainability assessment results of buildings are increasingly required and demanded by governmental authorities as well as market participants such as investors, banks, valuation professionals, property advisors, etc. Thereby, the assessment of a building’s sustainability performance, the analysis of functional performance requirements as well as the description of the building’s technical quality are seen as one entity. Also the issuing of labels and certificates is now slowly transforming into a process of continuous improvement and property monitoring along the entire building life-cycle. A variety of applicable tools and further instruments are available to serve this purpose.

4. Expected contributions from the scientific community

At the same time sustainability assessments of buildings are used as a source of information for real decision making by governments (in relation to subsidy programs), investors, banks or insurance agencies, the expectations and requirements regarding
accuracy and reliability of assessment results are also rising. Simultaneously, this creates a pressure of summarising complex data and relationships in highly aggregated format for decision makers. Thus, the scientific community is challenged to develop approaches and solutions for hitherto dissatisfactory solved questions.

In the area of assessing the environmental quality of construction works a clear trend towards using life cycle assessments (LCA) as one of the underlying bases. However, despite a number of published works on this issue (see for example [28],[29]) no satisfactory solution for the weighting and aggregation of impacts on the environment has yet been found. In addition, generally acceptable solutions to questions concerning the combined assessment of the cumulated mass flow (in the sense of assessing the use of different materials) as well as concerning the sealing and conversion of land as partial aspects of resource use have not yet been found.

In the area of assessing the economic efficiency of construction works life cycle costing approaches became widely accepted. The methodological basis for this has been developed and discussed within large scale EU projects [30]. However, the following issues deserve further research and clarification: assumptions on the life expectancy of building products, components and systems as well as the choice of an appropriate discount rate for converting future expenses. Regarding the latter issue it is indeed questionable if the methods of investment and economic efficiency analysis (which are usually considered appropriate for time horizons between 10 and 20 years) are applicable to buildings with life expectancies of 80 years and more. From the author’s point of view approaches of a ‘long term economy’ have to be developed and investigated for the building and construction sector. Furthermore, research is necessary to extend contemporary life cycle costing approaches by assessing and monetising property specific chances and risks. In addition, within the scope of further developing of the life-cycle costing approaches towards Whole Life Costing [31] issues of property income and development of property value and/or worth have to be taken into account as well. In particular the investigation of the relationships between the sustainability/quality of buildings and the stability and/or development of their market value deserves further attention [32].

Concerning the social dimension of sustainable development there is still not yet consensus on how to translate and adjust wider societal goals and concerns to the assessment and evaluation of single buildings. It is now widely accepted that impacts on health and comfort of building occupants have to be analysed and that impacts on occupant/employee satisfaction have to be investigated through post occupancy evaluations during the operating phase. Also investigations into the relationships between occupant comfort and productivity have gained acceptance; see for example [33]. Nonetheless, there exists a great need for research work to develop a methodology for a highly aggregated description of occupant satisfaction as well as to investigate the interrelation between occupant satisfaction and issues like vacancy risk. Finally, questions on how to describe, assess and integrate the aesthetic and urban design quality as well as the cultural value of buildings within an overall assessment are far from being satisfactorily solved.

5. Summary and outlook

Implementing the principles of sustainable development in the construction sector requires a much closer orientation and focus on the interests and decision making processes of the major actors concerned. These actors – such as governmental authorities, banks, investors, insurance agencies and their professional advisors – increasingly demand for reliable sustainability assessment results in order to obtain an additional informational basis for decision making. As consequence, assessment methods and tools are to be further developed towards improved applicability and reliability as well as greater consensus. Particularly the standardisation activities coordinated by ISO provide a substantial contribution to safeguarding consensus of assessment methods and procedures. For this reason, stronger engagement of Asian countries within these standardisation activities would be highly desirable, also in order to learn more about these countries’ requirements and experiences made in the area of sustainable building.

Besides an increased focus on market driven approaches (‘sustainability as a competitive factor’) for further advancing the transformation of property and construction markets there also exists a strong trend towards setting an appropriate framework (legislation, taxation, subsidy programs, etc.) for sustainable construction. Within European countries a number of positive experiences have been made on how market forces and governmental intervention can mutually reinforce and complement each other in pursuit of more sustainable construction.

As outlined above providing solutions and answers to still existing problems and questions presents a great challenge for the international scientific community. However, this opens up various possibilities for researchers from Asia and Europe to intensify collaboration as well as knowledge and experience transfer – especially in response to an increased globalisation or property markets which also always requires paying attention to regional traditions and particularities.

ACKNOWLEDGEMENT

The author thanks Dr. David Lorenz for providing assistance in producing this paper.
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