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DEGI Research - Real Estate FOCUS



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Green buildings, greenwashing and future green values

Dear readers,

Over the last eighteen months, "sustainability and property" have become a big issue in the property world. Many conferences, workshops, opinions and interesting articles have been devoted to this theme. Much of this has made sense, but greening as fashion has also come to the fore, particularly "greenwashing", which is the practice by which companies over-exaggerate their green credentials for PR purposes.

One important aspect that can get lost in the discussion is whether money can be actually be made through this growing awareness of green issues, sustainability and environmental impact. For landlords, the question is whether their tenants would be prepared to pay more for a greener building? We find that the short-term answer is no, why should they, with lower utilities on offer as a result and unclear direct benefits to be derived by paying more. A second issue concerns which building standard for sustainable buildings will be generally accepted across the industry internationally. There are already a number of standards, as covered later in this report. These include LEED from the US, BREEAM in the UK and DGNB in Germany. In time, we anticipate LEED will become the standard in the United States and just one standard will emerge across Europe. These two standards are hardly comparable systems, but they are helpful as labels perhaps.

A more exciting question for investors is when will property markets sanction unsustainable behaviours and when will they reward green buildings? Many investors are faced with exactly this conundrum, awkwardly timed now in the midst of the current financial market crisis. Their view has always been based

on economic sustainability rather than a pure environmental one: Is someone going to buy this unsustainable building in five or ten years' time? Or alternatively, where do I need to invest today to achieve profit tomorrow, with reduced probability of loss?

At the moment though, the question is more likely being discussed in academic circles, though, especially as something is simply missing, namely the product or, to be precise, the "green building". No matter where we start the analysis, the so-called future market for green buildings will show fantastic growth rates. As a result for 2008, we will only see first delivery in 2012 at the earliest due to the completion period for new housing. For investors therefore today the question is whether they should invest in something now that they will only receive tomorrow, let alone something the market will only then reward in the future? Equally, market cycles, like current downturn and banking crisis, are being ignored completely in this assessment and investors will need strong conviction therefore to bridge this interim period.

Admittedly, no effort should be too arduous when it comes to saving the planet. But how do we start a market of green buildings that everyone basically wants? The aforementioned supply-led market policy has the flaw of being easily described, but it lacks something essential in its mix, the leverage effect by the portfolio. Some 60% of buildings in Germany are more than 25 years old. In other words, if we do not want to wait forever for the supply of green buildings and want to achieve a measurable reduction of greenhouse emissions, we need to start with the property assets as they are now. But how does an artificial supply shortage with simultaneous investment in new buildings actually work? One solution for governments might be to set a fiscal stimulus that is not a forced tax, for example increasing the amortisation rate of real estate assets. Nevertheless, involving the state should really only be the last resort, after failure of the market's commitment to sustainability.

In the short term, whether it is possible to make money from the trend to green buildings is probably answered in the negative, in the medium term, the answer is yes and certainly so in the long term in any event. Eventually we will have a reference point on which everything can be measured: but this will be retrospective of course. But you can be certain the greening development cannot be reversed, as the stakes are too high.

Introduction

Definition of a green building: *"The broad term green building is today connected to many different ideas as it evolved from combining different concepts and currents. In German-speaking areas these concepts were influenced by ecological and biological currents in building and can be circumscribed, among others, with strategies for energy saving, environmentally friendly building and administration that conform to health standards. Such a building then exceeds the approach to reduce energy expenses and the resulting environmental effects in the utilisation phase: the complete life cycle will be included."*¹

Although the first report of the Club of Rome in 1972 had already talked or warned about the limits of growth, it is only around the turn of the millennium that national and international climate policies made concrete demands to all areas of national economies which increasingly affect the real estate economy. The relatively new concept of green building that escalates its (theoretical) importance due to increasing energy costs has started an intense debate about the technical and economical possibilities to improve the energy efficiency and environmental quality of buildings.

The efforts for sustainability in property are by now described by a number of market and marketing expressions such as "green buildings", "sustainable real estate" or "zero emission houses". Sustainability is a term that originates from forestry² that has advanced to a conceptual master plan and carries a strong element of individual interpretation and beliefs. However, it describes a holistic view that combines political, social, economic and ecological dimensions.

This is, however, only an academic discussion, so that is sustainability in relation to the real estate economy defined comparing it to a trend ("**it seems to be green**")? Or is, in view of rising energy and commodity prices, the inevitable disposition of investors and tenants already there to implement sustainable concepts and accept higher prices ("**it has to be green**")? Or does the low energy price elasticity so dominate in the property sector, that rising prices do not necessarily lead to a different attitude as a result ("**it is hard to be green**")?

Market determinants and fiscal parameters

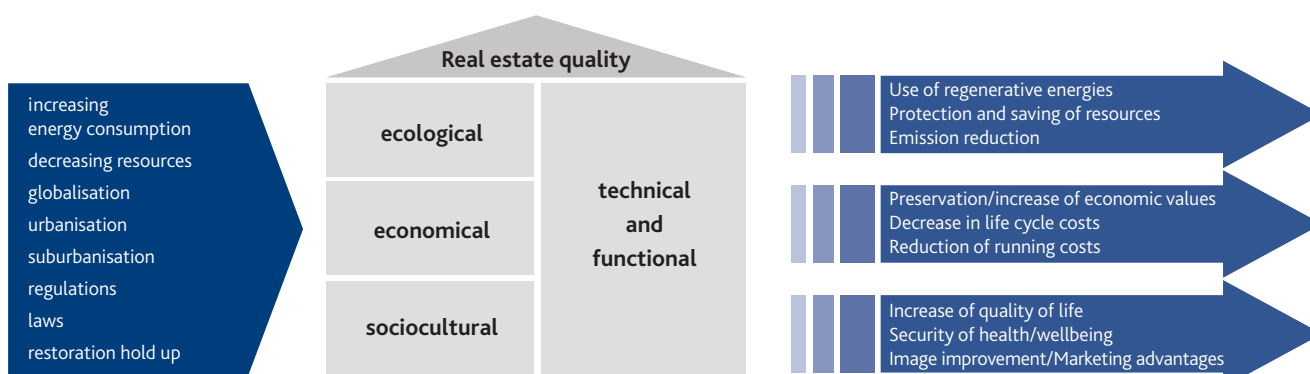
Almost 40% of energy consumption worldwide is used for buildings. Their share of harmful greenhouse emissions is nearly the same (in relation to the total life cycle of a property); in cities it goes up to 70%. The potential to save energy in the area of buildings or to meet the requirements of international climate control goals, therefore, is huge. With planning, building and administration of sustainable property, this goal is pursued to realise objects with a high urban design, functional and technical quality and to take into consideration economical, ecological and social demands simultaneously and equally (see figure 1). Location and connection to transport networks are important attributes of a property besides its quality. Considering that around half of the oil consumption worldwide is in the transport sector, an energy-efficient property needs to be located centrally or have an excellent connection to the public transport system.

The primary causes for the current rethinking are varied. First of all it is increasing energy and commodity prices, due to advancing globalisation, as well as the increase in awareness of the finite nature of resources. That is accompanied by the numerous public regulations, particularly environmental laws and energy-related fiscal instruments that apply especially to buildings.

The assessment of energy efficiency of buildings in Germany is increasingly important. This is seen from the implementation of the European Energy Performance of Buildings Directive³, and the continuing development of energy saving regulations, such as the introduction of energy identifications, as well as the upcoming building certification in form of the DGNB-Gütesiegel (quality seal). As of next year, permission for new buildings and major modifications on existing buildings in Germany will only be given if they are in accordance with these new energy saving regulations. For non-residential buildings, the regulations are based on DIN V 18599 that represents the complex energy characteristics of commercial property and is, at the same time, the basis for the voluntary German quality seal for sustainable buildings.

The following figure illustrates the development of energy saving building as an answer to the more concrete energy reducing measures and guidelines. According to this, the current building practice adopts

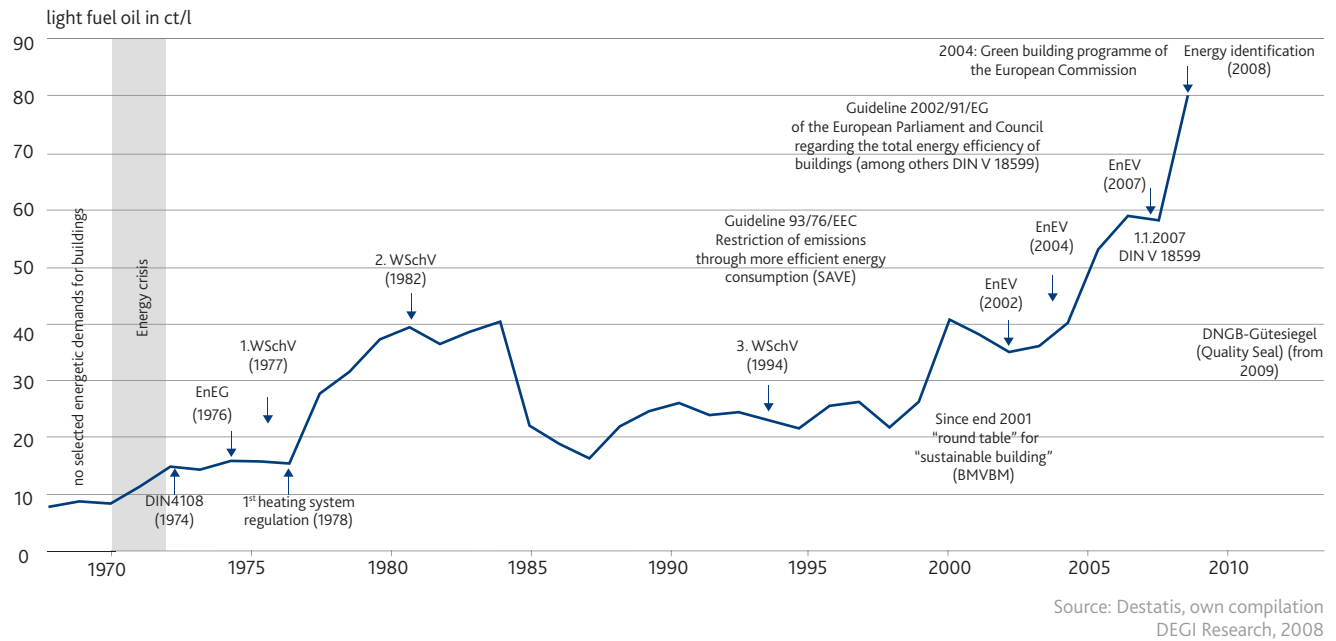
Figure 1: Complexity of sustainable real estate quality



DEGI Research, 2008

¹ cp. T. Lützendorf: In the black with "green buildings"; in: Karlsruhe Transfer No 36, 2007 ² cp. G. Hartig (1795): "Sustainability" is the cultivation of a forest whereby only as much wood is taken as will grow back so that the forest will never be cut down completely but can regenerate.

Figure 2: Development of fuel oil prices and selection of energy-reducing regulation attempts



the "upper" middle course between the minimum requirements of the Heat Insulation Ordinance and the energy saving regulation, even though it is a purely theoretical model.

Certificates and quality seals

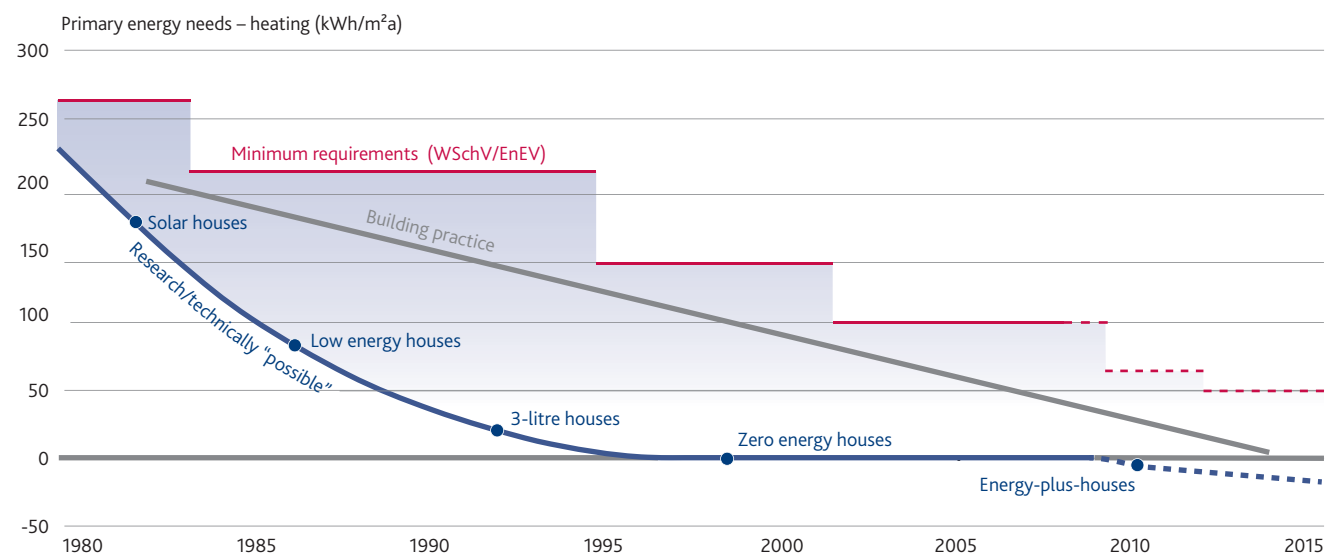
Certificates are doubtless important for the implementation of sustainable property, not least to relay the subject, raise public awareness and establish media attention.

Over the last few years, different assessment systems for green buildings were developed worldwide. BREEAM was established in 1990 and ranks as the oldest certification system for sustainable building.

It is considered the model and basis for the US standard LEED and for the Australian system Green Star, in each of which a continuation and country-specific adjustments were undertaken. LEED and BREEAM are the only internationally accepted standards among the approximately 15 assessment systems worldwide. As many foreign investors transact in the German property market and bring with them their own certification systems, Germany needs its own label that will become reality from 2009 in form of the DGNB-Gütesiegel.

This is how the German real estate economy connects with the inter-national certification systems for buildings that meet certain sustainability criteria. A certificate has to verify, weigh and to consolidate all sustainability criteria in a grade. Foreign labels are being criticised extensively now, mainly because the evaluation does

Figure 3: Development of energy saving buildings



not include the complete life cycle of a property, is often a simple checklist structure and does not continue to check sustainability of a property. Furthermore, state or building guidelines and the state of the technology, as well as geographical and climatic conditions, vary between countries so that a LEED certification can be achieved relatively easy in Germany. In return, the development of the DGNB-Gütesiegel with its 60 criteria appears a very sophisticated and compact system (see table 1).

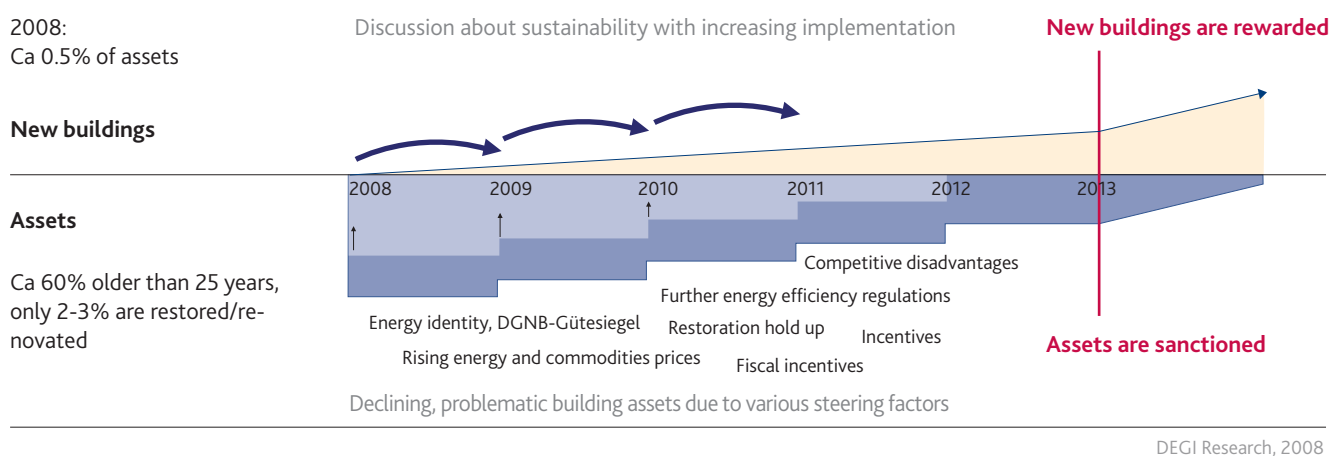
Status quo and future market development

Green buildings in Germany have so far been an exception and far from standard, even though the property economy has technical innovations to affect climate change with economic success. The actual situation is also affected by the large share of problematic real estate assets: Germany's assets – 60% of which are older than 25 years – exhibit a considerable restoration hold up and are in urgent need of refurbishment from an energy point of view.

of green building standards will come. Two new research studies in the USA, in contrast to Europe, show that tenants, as well as investors, have factored in the advantages of green buildings. In an econometric analysis comprising 8,183 office properties, Eichholtz et al. reach the conclusion that rents in green buildings are 6% higher than in comparable conventional buildings. The price for green buildings is, on average, 5.1 million USD above prices of comparable objects³. In the analysis of Fuerst and McAllister, a total of 3,626 commercial properties were included. There the results of the regressions show that rents for buildings with one Energy Star or a LEED Certificate are 11.8% higher than for non-certified objects. The price effect is up to 31% depending on the certification⁴.

According to DEGI Research, penetration of the market by buildings that are energy efficient strongly depends on external steering factors that are illustrated in figure 4. It is evident that the focus on sustainable property is not only about cultivating an

Figure 4: Future development of the green building market in Germany



New, not necessarily sustainable, buildings account for only 0.5% of building stock. The ownership structure is another challenge as a small share of "professionals" (around 25%) is confronted by a large share of "hobbyist investors" (around 75%). Only the former can therefore take a leading role. A number of further obstacles are added on top of that, amongst them economic considerations, lack of liquidity and an age-related low willingness to invest by building owners. But there are also uncertain business conditions, such as continuing discussions about bans and promotions, as well as excessive regulations from the tenancy law.







Although the demand for buildings that meet the ecological requirements is increasing in Europe, the users are not as yet prepared to pay a higher price for them. The cost risk still seems to exceed willingness and raised awareness. Now we have to wait and see when a stronger acceptance and implementation

image, but also about concrete economic and long-term competitive advantages. Apart from rising energy and commodity prices, many sustainable set screws or energy efficiency regulations and incentives will lead to a gradual reduction of problematic building assets, as the market participants will sanction the undeveloped non-restored assets in the medium-term. Currently only 2 to 3% of building assets are renovated or restored each year.

Even if – not least because of the restoration hold up – it will take several years for sustainable quality to establish itself in new buildings as well as in existing assets, a "low level standard" in buildings has no chance in the longer term. Technical innovations continue to influence the manner and extent of energy use, even if they are established only gradually because of long investment cycles. That is why energy efficiency will continue to have influence over lending.

³ cp. P. Eichholtz, N. Kok, J. Quigley: Doing well by doing good? Green Office Buildings in: Program on housing and urban policy, Working Paper No W08-001, 2008 ⁴ cp. F. Fuerst, P. McAllister: Does it pay to be green? Connecting economic and environmental performance in commercial real estate markets; Paper presented at IREBS Conference 13-14 June 2008

Table 1: Selection of international certification systems for sustainable buildings

Evaluation system	Rating and content	Focal points	Comments/assessment
 <p>DGNB-Siegel (since 2008) (Germany)</p>	<ul style="list-style-type: none"> - certificate and seal, poss. more-star-system which is a dynamic evaluation system that can be expanded to bridges, motorways and plants - 60 summary criteria to assess property quality. Each summary contains an evaluation table from 0 to 10 points. - first seal early 2009 	<ul style="list-style-type: none"> - resource protection - protection of global environment - environment suitable for humans - health and comfort of occupants - value preservation 	Takes up economic subjects such as value preservation and gives builders and planners freedom to reach set targets. It ranges from ecobalance and use of resources to technical building quality, thermal comfort and life cycle costs. The evaluation system is very complex with 60 criteria, which can be disadvantageous.
 <p>BREEAM (since 1990) British Building Establishment Ltd. (BRE) (Great Britain)</p>	<p>Measures building performance in the form of</p> <ul style="list-style-type: none"> - pass - good - very good - excellent 	<ul style="list-style-type: none"> - planning and building process - health and comfort - use of resources (energy and water) - materials and waste - land consumption 	Refers to residential and commercial real estate of any type so is not considered a differentiated evaluation system and can have disadvantages with regard to real estate quality.
 <p>LEED (since 2000) US Green Building Council (USGBC) (USA and Canada)</p>	<p>Measures building performance with regard to fixed criteria in the form of</p> <ul style="list-style-type: none"> - LEED certified - LEED silver - LEED gold 	<ul style="list-style-type: none"> - property - water balance - energy and atmosphere - materials and resources - ambient air - innovation and design 	Pragmatic if slightly superficial but acceptable solution with high marketing power and suitable for "export". Evaluation is done for planning, building and operation.
 <p>Green Star (2002) Green Building Council of Australia (GBCA) (Australia)</p>	<p>Measures building performance in the form of a star-system</p> <ul style="list-style-type: none"> - 4 stars: best practice - 5 stars: Australian excellence - 6 stars: world leadership 	<ul style="list-style-type: none"> - energy - emissions - materials - land consumption and ecology - water - transport - interior residential quality - management 	Partnership with leading Australian industrial companies and government organisations. Evaluation is done during planning, building and operation.
 <p>CASBEE (since 2001) Japan Sustainable Building Consortium (JSBC) (Japan)</p>	<p>Measures in the form of "building environment grade of effectiveness" BEE=Q/L</p> <ul style="list-style-type: none"> - C (poor) - B, B+ and A - S (excellent) 	<ul style="list-style-type: none"> - Q (quality): ecological quality of building (interior, operation, environment) - L (loadings): ecological impact of building (energy, resources, materials) 	Self-checking system: evaluation is done according to draft specifications and expected performance and is applicable to complete life cycle: draft, building, operation, renovation, and demolition.
 <p>HQE (since 1990) Association HQE (France)</p>	<p>Distinguishes between three categories of building quality</p> <ul style="list-style-type: none"> - pass ("base") - strong ("performant") - very strong ("très performant") 	<p>14 categories in the areas of</p> <ul style="list-style-type: none"> - eco-building - eco-management - comfort - health 	Evaluates management system during the process (SMO) and also sustainable quality of building (QEB). Checks are done at the end of three phases: order, draft and implementation.

Source: own research
DEGI Research, 2008

Conclusion

The market is aligning itself anew regarding sustainable property as there are many reasons for energy measures. Included in this is that the economic life span of buildings can be extended (value stability) and the probability of vacancies are reduced (risk avoidance), the future maintenance costs are minimised and profit potential can be increased with cost-effective restoration.

If the market laws maintain their validity, this will lead to higher rental income with lower vacancy risk and higher buying price multipliers in the coming years. Medium to long-term green buildings achieve their market movement rate and price effectiveness with extraordinary yield, while conventional buildings age even quicker and record decreasing yields and, above all, competitive disadvantages. Whether a commercial property can provide the relevant certificate or label will have increasing influence on decisions of occupants and investors. Despite the imminent introduction of the DGBN-Gütesiegel in Germany, DEGI Research considers a pan-European solution more goal-oriented than national solo attempts by individual countries.

One of the main reasons for cautious investment in building assets is the lack of capital of some decision-making groups. Private owners and smaller companies rely on external funds to finance energy saving investments because of their own limited financial capacity.

Furthermore, the latter groups are often in competition to other investments of larger, more prominent companies. High price validity and uncertain price expectations by energy providers, especially regenerative ones, also lead to limited levels of investment. Furthermore, the findings from the energy building restoration so far show that the amortisation period of up to 25 years is too long and gives no impetus to initiate broad investments. Against this background, it seems sensible to create tax incentives (e.g. in the form of low interest credits, contracting, start-up financing, increased amortisation) so that these investments have a payback period of 10 years at the most.

This calls for suitable management and information systems that support a higher investment return by using the sustainable quality of a property portfolio.

The sector will in time pay more attention to green building; especially large companies in established locations. Property in larger cities will lead the way here (see Frankfurt, respectively pertinent energy-reducing regulations in high rises⁵). The profitability of green buildings will become apparent – for investors as well as for occupants – not least as more market transparency and professional data emerges. Those who will forego sustainable property investments and management practices will in future have to accept not only loss of value and performance but also image. In the long term, economy and ecology will be equals: if it is not ecological, it will not be economic.

⁵ cp. ibid: Accordingly, the total primary energy consumption of new buildings should be limited to less than 150 kWh per m² GBA (compare: the standard primary energy need of an administration building in Germany is 400 kWh per m²). At least half of the consumption has to be covered by renewable energies.

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