

# SUSTAINABLE HOUSING – PART OF A HEALTHY AND ATTRACTIVE COMMUNITY

Vida Maliene

School of the Built Environment, Liverpool John Moores University, UK

[v.maliene@ljmu.ac.uk](mailto:v.maliene@ljmu.ac.uk)

Naglis Malys

MCISB, Faculty of Life Sciences, University of Manchester, UK

[n.malys@manchester.ac.uk](mailto:n.malys@manchester.ac.uk)

## ABSTRACT

United Kingdom cities have been subject to severe social and economic pressures over the past few decades, which have had an uneven spatial impact on the urban environment and have given a rise to the concentration of the most deprived households in the worst urban neighbourhoods. The current government objective can be interpreted as an attempt to implement regeneration projects or create sustainable communities to improve quality of life. Housing is a key issue to consider in delivering healthy and attractive communities. Sustainable housing should be well available, high-quality, economical, ecological, aesthetical design, comfortable and cosy one, which would better suit the needs of a person. Furthermore, dwelling houses, apartments or, in other words, housing premises, must be set out according to the conditions of that locality and must meet the established technical and hygienic requirements. The paper focuses on sustainable housing issue in the UK and a sustainable housing development model for communities is proposed.

**KEYWORDS: sustainable housing, development model, sustainable communities, urban regeneration.**

## INTRODUCTION

Housing is an element of the community's dwelling area with its own social and spatial environment, in which exist many different forms of houses, different architectural styles and designs. A house or an apartment is usually the largest purchase that a person makes throughout his/her entire life. It satisfies one of the major personal needs, thus influences quality of life and can be considered linked with the guarantee of human rights. With changes in political and economic environment in the UK, the problem of housing has become very relevant. Population growth and real disposable incomes increase created a shortage of housing in the UK. Increased demand of housing played an important role in increase of house prices. During last seven years the house prices have doubled or more than doubled and became less affordable for wider society. There is a constant Government regulated supply of new dwelling through private enterprise in urban areas. However, even the new homes are being built continuously, they are small and poor quality by EU standards. For example, average floor area of new dwellings in England is second smallest in EU after Italy (European housing review, 2007).

Today the housing situation is a diverse one, the dual understanding and changing approach exists for the time being. A home should be chosen and changed "as many times as needed" having in minds the needs and opportunities. Available job, income, assets and education all characterise both the social status of the family and, consequently, the housing situation. In many cases, families having many children, as well as persons belonging to the lower social

levels, live in homes which are of an extremely low standard if judged according to the effective minimal requirements (bearing in mind both their equipment, size and number of premises). Families with greater numbers of members usually enjoy smaller areas than those in the smaller households. However, an approach also exists in parallel that the problems of housing are related to quality aspects, and that such difficulties are also characteristic to the difficulties of other Western communities (Gondring and Lammel, 2001). It is very easy to foresee that a dwelling, which is already quite difficult to purchase, shall become even more expensive item in the event an increasing divergence between the prices of housing and mean monthly salaries. Thus, a current goal today is to search for sustainable options for housing from the economical, social - psychological and ecological point of view and to accumulate the global experience and apply it in a creative way in order to reach higher standards of economical and social welfare (Maliene et al., 2008).

The purpose of this paper is to emphasize housing as a key issue to consider in delivering healthy and attractive communities. Sustainable housing should be available in sufficient supply and with information on it, high-quality in technical and supply level, economical with opportunity to cover purchase and exploitation expenses for greater number of households, ecological having energy saving, ecological building materials, sustainable waste management, aesthetical design, comfortable and cosy having in mind social-psychological aspect, representing home, which would better suit the needs of a person. Furthermore, houses and apartments must be set out according to the conditions of that locality and must meet the established technical and hygienic requirements. In the paper are introduced criteria characterising sustainable housing and the model of sustainable housing development.

### **Current housing situation in the UK**

A traditional UK housing has been determined by the local natural and climatic conditions, traditions of ethnic culture, and social, economical and technical progress. The majority of dwellings are single-family houses. In England in 2000, 82% of households lived in houses, 16% in self-contained flats and 2% in bed-sits and other non-self-contained accommodation. The housing stock, furthermore, is relatively old in comparison to many other European countries – with 41% built before 1945, another 45% between 1945 and 1984; and only 13% since the mid-1980s. Housing stock growth slowed from the 1970s, although with a minor revival during the boom years of the 1980s after which it decelerated again (European housing review, 2007).

Economic growth has been strong in recent years, which has a strongly positive effect on the housing market. Population growth and real disposable incomes increase created a shortage of housing in the UK. Over the last 30 years we have seen demand for new homes increase by 30% - people are living longer, and choosing to live alone - whereas over the same period house building rates have dropped by over 50%.

The quantity, quality and location of housing are major factors in determining how people live 'healthy' their lives and the contribution they can make to a wider society. However, the supply of new homes is now at its lowest levels for decades and affordability has fallen leading to a continued lack of demand among first time buyers. 'The Barker Review', released in 2003 after government intervention, set out a series of policy recommendations to address the lack of supply of housing considering the role of competition, capacity, technology and finance in the industry coupled with the interaction of the planning system and the government's sustainable development objectives.

Britain urgently needs to build up to 140,000 extra houses a year if supply is to keep up with demand. Of this, between 70,000 and 120,000 of those homes should be provided by the private sector, while around 23,000 should be by social housing units. In 2001, only 175,000 houses were built in the UK – the lowest since World War II” (Environmental Health News Online, 2004). The government has an ambition to built 3.8 million new homes by 2016 (Littlewood and Geen, 2003).

Increased demand of housing played an important role in increase of house prices. During last seven years the house prices have doubled or more than doubled and became less affordable for wider society. The UK housing market has, in fact, been highly volatile for several decades, significantly more so than the average country experience in the EU. There is a constant supply of new dwelling through Government mainly through private enterprise in urban areas. However, the new dwellings being built are relatively small if compared to other EU countries (European housing review, 2007).

However, there have been warnings. A report by Barlow and Ball (1999) found that in the late 1990s, the demand for housing grew rapidly, notably along with production costs and consequently, much of the extra demand was soaked up in higher building costs and land prices, rather than in more housing. Housing needs were changing, shifts in household structures and lifestyles leading to demands for more varied and flexible house designs. Furthermore, the poor price responsiveness of supply exacerbates housing market cycles”. Meen (1999) goes on to identify that Britain exhibits a distinct spatial pattern over time, rising first in a cyclical upswing in the south-east and then spreading over the rest of the country, better known as the ripple effect. This meant there were large regional price differences and that the southeast appeared to lead the house price cycle.

A simple overview of the UK’s housing problem suggests that difficulties, which have developed, and remained unresolved, are largely down to planning (Carmona et al., 2003). However, planning is only part of the reason. Blame should also be directed towards successive national governments as they have under-invested in public services and steadily withdrawn from a social housing provision, while local providers have pushed for the wrong houses in the wrong places (Carmona et al., 2003). It is also felt that the house building industry as a whole must take some responsibility as they have pursued maximum profitability in lieu of social and environmental responsibility.

### **Sustainable housing - part of sustainable communities**

The term “sustainability” has come to the prominence over last few decades, promoted initially by environmental concerns (Brundtland Report, 1987) and more recently addressed to the communities. Sustainable communities are places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all (Office of the Deputy Prime Minister, 2003).

For communities to be sustainable, they must offer hospitals, schools, shops, good public transport, clean and safe environment. People also need open public space where they can relax and interact and the ability to have a say on the way their neighborhood is run. Most importantly, sustainable communities must offer decent homes at prices people can afford.

Today, we speak about the sustainable housing as part of sustainable community more and more often. This is because the housing provides the personal space of the individual, the place with which the occupant identifies basic urban existence (European Press Council, 1993). It is considered a place of non-service living and, at the same time, a space for privacy where private and emotional family life goes on, protected from external factors. There are no duties executed within such housing. It is thought that housing is a place meant for leisure activities and representation. Its form, place, plan, setting out, etc, has an influence on this side of living. At the same time, a definition of a modern housing includes ecological aspects (saving of areas for building, decrease of energy consumption, etc.). There are identified the following characteristics of a modern sustainable housing (Gondring and Lammel, 2001):

- From a social point of view – apartment or house is a place for family. It has a symbolic meaning of social status.
- From a functional point of view – apartment or house is a place for leisure activities and rest, not for professional activities.
- From a social–psychological point of view – apartment or house is a place for privacy and intimacy.
- From an economical point of view – apartment or house is an article. It is reclaimed during purchase or rent.

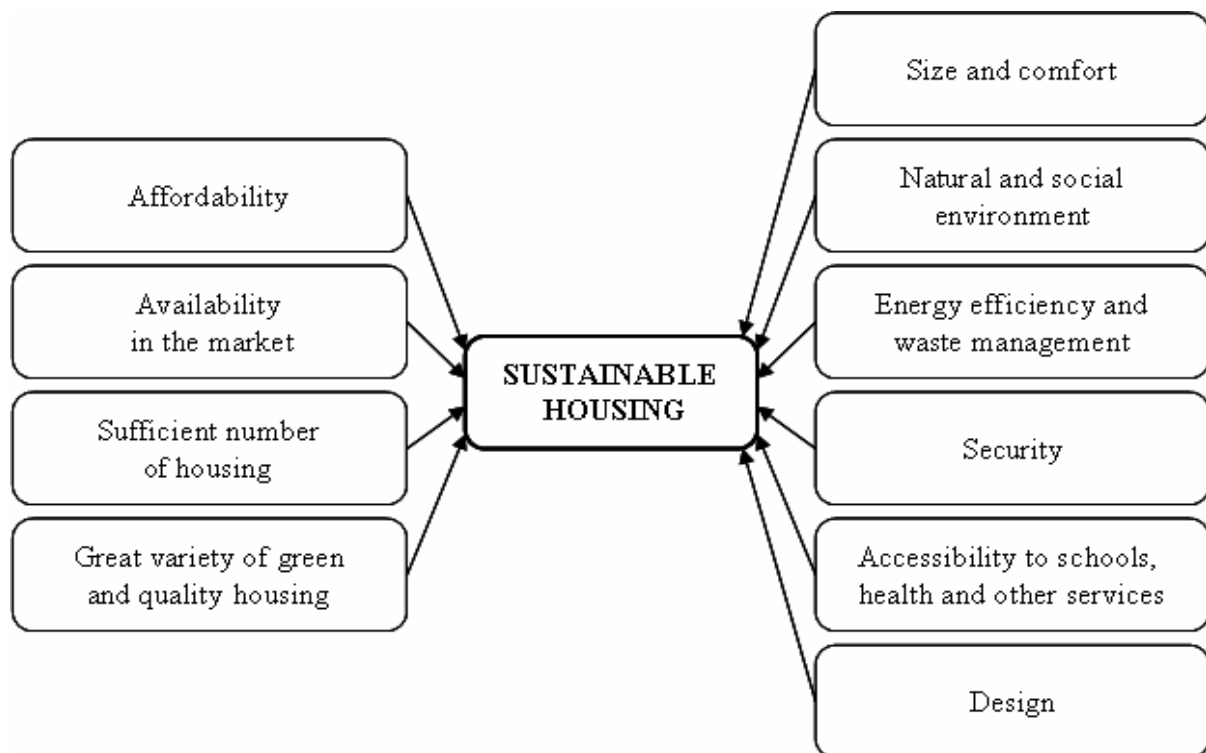


Figure 1. Criteria characterizing sustainable housing

Housing is very different now from that which used to exist within primitive society or in the Middle Ages. In the 19<sup>th</sup> century, industrial workers were unable to obtain sustainable housing standards. Historical analysis shows that the first homes used to depend on natural conditions and materials found in the environment, whilst sustainable houses are equipped to ensure cosiness to our homes, including security and energy saving. These days, the part of modern homes serves for representation, the other for the living of all the family members. The design of houses and apartments is adapted to increased individuality. Such functions as

food preparation, eating, sleeping, hygiene, communication, etc. were separated into special premises. Separate rooms are for separate persons, i.e. parents and children, sons and daughters and, in many cases, wives and husbands. Such divisions of functions and persons are a good precondition to even more private housing space. This could be one of the features of a sustainable housing. The Latin word *rationalis* means *clever*. Therefore, the sustainable housing is housing planned in a clever way. One is able to high-quality (in technical and supply level), economical (opportunity to cover purchase and exploitation expenses for greater number of households), ecological (energy saving, ecological building materials, etc.), comfortable and cosy (having in mind social-psychological aspect) one, which would better suit the needs of an individual (Maliene and Ruzinskaite, 2006). Besides that, houses, apartments or, in other words, housing premises, must be set out according to the conditions of that locality and must meet the established technical and hygienic requirements. Also other criteria are important for sustainable housing (Figure 1).

Recently, UK government proposed an ambitious ‘umbrella’ programme for sustainable communities. In this programme the sustainable housing is one of the major issue necessary to address in creating sustainable communities (Office of the Deputy Prime Minister, 2003; Office of the Deputy Prime Minister, 2004).

### **Regeneration to sustainable housing and model of sustainable housing development**

New sustainable housing can be a driver of urban regeneration, and sustainable housing is an essential ingredient of any regeneration scheme. Sustainable housing stimulates physical, economic, environmental and social improvement, and the resulting enhancements in turn stimulate new investment and new opportunities as the urban environment once again become full of life and enterprise (Edger and Taylor, 2000).

Throughout the history of urban regeneration housing has been a major concern for all political parties. Housing has been in the lime light in all new interventions of policies. The nature of policy has changed direction several times. Over the last several decades, urban regeneration policy has both evolved and had various foci.

Development of sustainable housing is an important objective of sustainable communities strategy. According to the definition presented above, the sustainable housing should be well available, matching quality, economical, ecological, cosy, comfortable needs of an individual (Maliene, 2001). Based on the experience of other countries, it is quite possible to create and apply (maybe even per every town or community) a model of reasoned housing in the UK. This model would assist developing healthy and attractive communities. The new housing forms do not emerge in place of the old ones but next to them, so the said model could consist of three parts: private and social households, housing market (existing dwellings) and model of development land for new housing (Figure 2).

In the first part of this model, the purchasers of housing are described, i.e. households, which are different by their size (number of members), age, generations living together, purchasing power and subjective wishes. The following three household groups are important to UK housing market:

- Households presented to the market for the first time (insufficient means to pay for household);
- Households are wishing to improve a housing;

- Aged people (receive low income and want to move, for instance, to smaller and cheaper dwelling).  
This needs a variety of housing offers.

The entire housing market with predictive households acting as the potential purchasers is divided into rent and property markets appropriately. Firstly, one should analyse the property forms. The housing demand is based on the size of housing area, so demand is the second parameter of the model. An area depends on size of households, location and part of housing market (rented or owned) and must meet the wishes and financial muscle of the inhabitants (Figure 2).

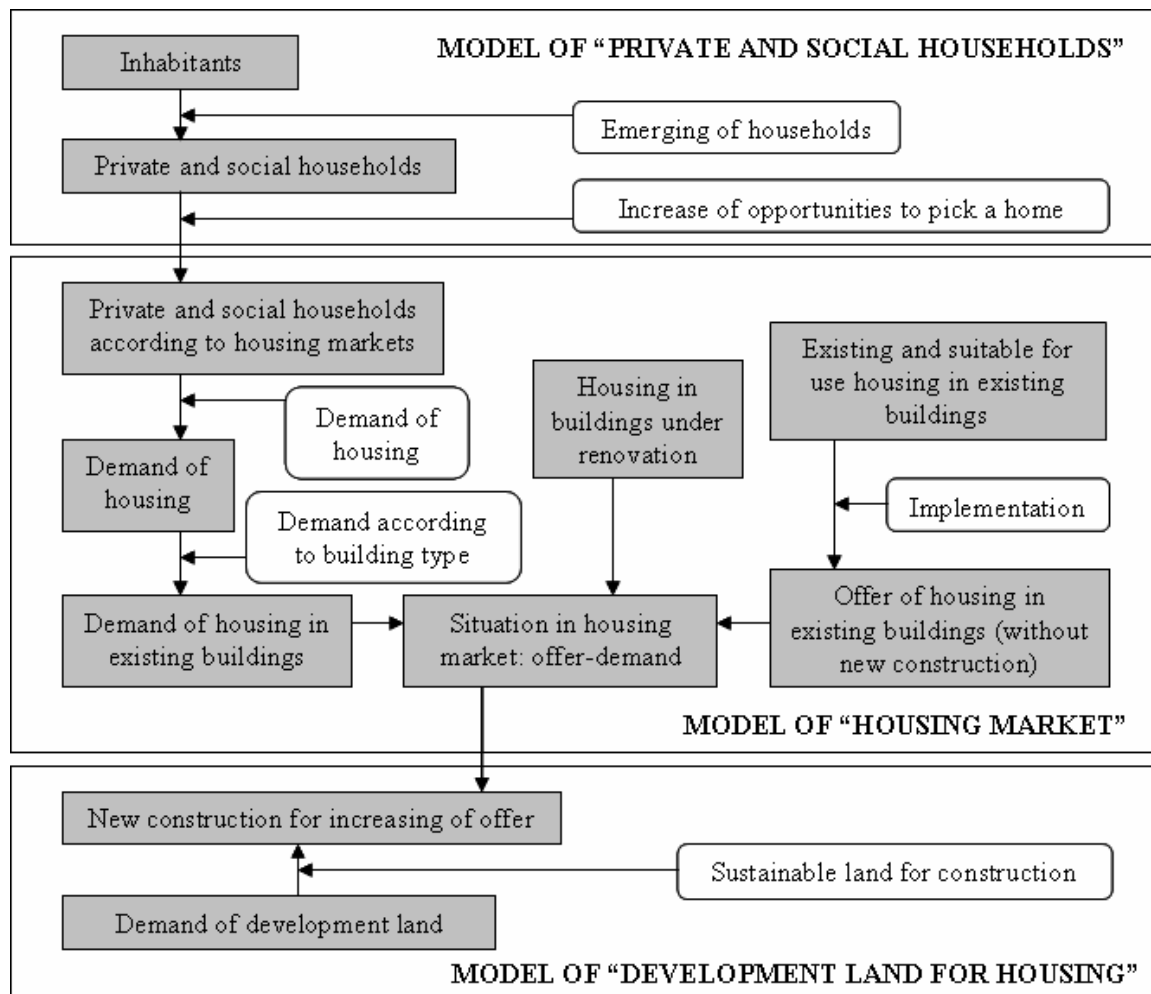


Figure 2. Model of sustainable housing development. Internal parameters of the model are in greyed rectangle. External parameters of the model are in rounded rectangle.

The sufficient amount of dwellings should be present in the market as well as their variety according to type (house, apartment, cottage, etc.), form of possession (owned, rented), standards (of accommodation) and location. The valuable housing means that there is a sufficient offer and information on it, also an opportunity to change the housing if circumstances also change, and cover the purchase and exploitation costs. At this stage a special decision support system could be used in order to assist in the choice of the best option of sustainable housing.

In the offered model of a sustainable housing development, it is advisable to highlight the structures under renovation because poor construction quality and bad engineering installations are characteristic for many housing blocks of flats, as well as low energy efficiency (no thermal insulation), no large-scale adequate reparations, high energy losses in the central heating systems and hot water production units.

Change of an area demand (in the existing and suitable for use housing buildings, as well as in buildings under renovation) during some certain period determines even greater demand or demand for an unoccupied area (in the event of emergence of more attractive apartments in the market, the same percentage of already existing apartments shall also be available for sale). When demand exceeds the existing offer, a demand for newly built dwellings emerges in order to satisfy such demand.

Developed land in settlements is needed for the building of the new housing (land for houses and infrastructure). There is a close coherence between new developed and developed land and undeveloped land needed for housing. So-called construction density is a very important factor. One should also pay attention to the location of new structures and the kind of already available ones (houses for one or many families). Speaking about a new housing with minimal costs, one should pay attention to the fact that new buildings are extremely expensive. There is a low supply of land in really good locations, along with a very long and difficult order of issuing of planning permission for construction. After analysis of the parameters of the model of a sustainable housing based on the experience of the Western countries, the local government, development agencies and developers could create sustainable housing in their communities.

## **Conclusions**

A new understanding of the sustainable housing is in the formation process now. It is quite natural that we still do not have good examples of a new and sustainable housing. During the search for own models, it is worthy to review the experiences of neighbouring countries, develop state-of-the-art and ecological technology, and solve the organisational problems of a housing.

The sustainable housing is characterised as available (sufficient offer and information on such offers), quality (from the technical and provision point of view), economical (greater number of households have opportunities to purchase it and cover the exploitation expenses), ecological (energy-saving, etc.), comfortable and cosy (from the social-psychological point of view).

It is important to recognise that great variety of high quality housing (e.g. building construction, design, comfort, size, etc) is as important as other sustainable housing characteristics (affordability, accessibility, energy efficiency, waste management, security, etc). Increased demand for new homes cannot result in reduced quality and sustainability of housing.

In the paper proposed model is to aid a housing development for sustainable communities. The sustainable housing development model can be adapted to every town and will help to create healthy and attractive communities.

## REFERENCES

- Barlow, J. and Ball, M. (1999), "Introduction – Improving British Housing Supply", *Housing Studies*, Vol. 14 No. 1, pp. 5-8.
- Brundtland report (1987), *Our Common Future-Report of the 1987 Commission on Environment and Development*. Oxford University Press, Oxford.
- Carmona, M., Carmona, S. and Gallent N., (2003), *Delivering New Homes – Processes, Planners and Providers*, Routledge.
- Edger, B. and Taylor, J. (2000), "Urban Regeneration", in Roberts, P. and Sykes, H. (Ed.), *A Handbook*, British Urban Regeneration Association, SAGE, Publications, London, pp. 153-175.
- Environmental Health News Online, (2004), Barker: housing shortage curtailing economy.
- European housing review 2007, RICS
- European Urban Charter (1993), European Press Council.
- Gondring H. and Lammel E. (2001), *Immobilienwirtschaft*, Wiesbaden, Gabler, (in german)
- Littlewood, J.R. and Greens, A.J. (2003), "A new multidisciplinary team for the UK's 21<sup>st</sup> century homes", *International Journal of Environmental Technology and Management*, Vol. 2 No. 1-2, pp. 267-278.
- Maliene, V. (2001), "Valuation of commercial premises using a multiple criteria decision making method", *Property Management*, Vol. 5 No. 2, pp. 87 – 98.
- Maliene, V., Alexander, K. and Lepkova, N. (2008), "Facilities management development in Europe", *International Journal of Environment and Pollution*, in press.
- Maliene, V., Ruzinskaite, J. (2006), "Development of sustainable dwelling in Lithuania", *XXIII FIG Congress*, Munich, pp.1-15.
- Meen, G. (1999), "Regional house prices and the ripple effect: a new interpretation", *Housing Studies*, Vol. 14 No. 6, pp. 733-753.
- Office of the Deputy Prime Minister (2003), *Sustainable Communities: Building for the Future*.
- Office of the Deputy Prime Minister (2004), *The Egan review: skills for sustainable communities*. RIBA Enterprise Ltd, London.
- Schiller, G. (2007) "Urban infrastructure: challenges for resources efficiency in the building stock", *Building Research & Information*, Vol. 35 No. 4, pp. 399-411.