Low-Rise, High-Density Housing - Sustainability – Past and Future in Hungary

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Abstract

The paper discusses the position of low rise, high density housing in Hungary on a theoretical level, from the conceptional point of view of strategy planning. The purpose is that the dissemination and popularization of the housing type would be beneficial to the society. Before and after World War Two different nature of this housing type was present in the country, but after the regime change in 1989 the continuity has been lost.

This paper aims to support the above assumptions - discussing the benefits of the installation type in the light of global and local issues, and search of the housing type's local positions. The actuality of housing issue is relevant because of the planning of 2014-2020 housing program, the fall of yearly built houses, the imbalance of housing allocation and the urgent questions of global problems.

The paper’s method is threefold (1) discusses the potential of the housing type in correlation with the three pillars of sustainability, (2) compares it in relation with the local housing problems and (3) searches its position according to past examples. As final summing the paper suggests strategic objectives for the future use of low rise, high density housing in the country.

Keywords: housing; low-rise; high-density; sustainability; Hungary

Introduction

The 20th century saw several of attempts to popularize low-rise high-density housing in Hungary mostly initiated by architects convinced of the advantages of spreading this type of housing in Hungary after they had studied Western European examples (Bitó 2003). Preceding World War II, several articles had been published in Hungarian Architecture, the most significant Hungarian architectural periodical on modern terraced housing estates and experimental residential complexes built in Western Europe, such as the Weissenhofsiedlung of Stuttgart (1927) and the Werkbundsiedlung of Vienna (1932) (Bierbauer 1932). During the socialist system in the post-war period the Private Housing Target Programme Committee worked out several analyses to convince decision-makers by detailing the advantages of group housing and thus trying to encourage the construction of terraced houses primarily by relying upon aspects that seemed to be convincing for decision-makers and prioritize aspects emphasized by the political system such as cost-effectiveness and productivity. The Hungarian National Housingtype Desing Institute also worked out standard designs (fig.1,2) for single- and two-storey terraced houses. (T. Int. 1964).
Following the change of the political status quo, the housing market turned favourable for profit-oriented investorial projects. State participation in housing projects decreased whilst the continuity of group housing was interrupted. Group housing projects were viable by convincing capital-intensive investors of the market and proved successful in some cases on architectural initiatives, but the integrating ambition vital for the spread of this type of housing has not appeared so far.

This paper is meant to pick up the loose ends and project the potential vision for low-rise intensive housing in Hungary. Agreeing with her former compatriots and relying upon experiences obtained in Western Europe, especially in the Netherlands, the author concludes that the spreading of this type of housing would be advantageous to Hungarian society.

In line with the above, the present paper focuses on searching for a niche for group housing in Hungary in the context of contemporary issues and housing conditions with the aim to draw parallels between sustainability and housing as well as to find the niche for low-rise high-density housing within a would-be sustainable housing sector and outline strategic proposals to potentially solve housing-related issues that various social groups are soon to face.

This essay is a three-fold one as it discusses low-rise high-density housing regarding three aspects (1) the three pillars of sustainability whilst studying the correlations between sustainability and existing housing, (2) existing housing in Hungary and examples of the past century, (3) the vision rooted in the past – in the context of searching for its niche in Hungary.

1. Sustainable housing

As a result of the rapid technological development coupled with the ambition to satisfy comfort demands of ever-rising standards, mankind has gone over the limits to which the planet is still capable of self-regeneration. Along the expansion of global and local crisis, we have been using the concept of sustainability for about thirty years now. Although this term is widespread also amongst contemporary Hungarian architects, it is not endowed with the same integral meaning. Owing to the global and local crisis, an especially burning problem now for us is to grasp the dimensions of sustainability and spread its approach.

The first part of this essay is an analysis of the correlations between housing in Hungary and sustainability considering the three pillars of the latter and clarifying what we actually mean by sustainable housing and sustainable home-building. In line with the original objective, we shall particularly focus on group housing developments also referred to as low-rise high-density housing.
The definition of sustainability

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (WCED 1987)

Hungary’s existing housing stock has undergone significant development and growth since the 1900s. Whilst in 1920 there were 1.8 millions flats in the country, their number increased to 2.5 millions by the time of the post-war housing shortage to exceed 4 millions now. (KSH 2011. p. 37.) Simultaneously with the quantitative growth also the comfort level of housing rose steadily.

The minimal standard of modern housing needs are met today by homes having water closets, a bathroom and kitchen with running water and indoor plumbing, at least one more room and no walls without foundation (KSH 2005 p. 14.). In the 1960s the majority of homes in Hungary already had these conditions. However, the percentage of substandard housing in the country reached 13 % even in 2005.

As society developed, another objective was uttered during the socialist era, that every family should have a flat of its own with a separate room for each member (Timon 1982). This goal has been approached in the past few decades, in 2011 one tenant had 32 m² on average, (KSH 2011 p. 35-44.), but the uneven distribution of housing is still a challenge. Owing to the lack of rented homes, large families with modest income tend to live more densely, whilst single individuals have significantly larger floor areas.

Governed by the post-socialist approach to marketing, the era after the change of the political system saw the introduction of new housing types to meet rising requirements. Typical of this period, the so-called park-housing were built by profit-oriented contractors interested in the highest possible profits. To top it all, the building sector was compromised by corruption and undeclared work, thus standards expectable in markets further deteriorated. An overall phenomenon of this era is the growth of housing dimensions parallel with the steady rise of requirements. The average basic area in 2011 was already 79 m² (KSH 2011 p. 38.). Considering the carrying capacity of the Earth, the increasing demands from society cannot be sustained in every aspect for the generations to come. Ecological footprint calculations also prove this. Important values are compromised, while we are trying to constantly meet convenience demands.

<table>
<thead>
<tr>
<th>Rate of occupied dwellings with no lavatory or bath (%)</th>
<th>1920</th>
<th>1930</th>
<th>1941</th>
<th>1949</th>
<th>1960</th>
<th>1970</th>
<th>1980</th>
<th>1990</th>
<th>2001</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of occupants/home</td>
<td>4,3</td>
<td>3,92</td>
<td>3,82</td>
<td>3,72</td>
<td>3,49</td>
<td>3,27</td>
<td>3,03</td>
<td>2,74</td>
<td>2,67</td>
<td>2,51</td>
</tr>
<tr>
<td>Average floor area/home (m²)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>59</td>
<td>-</td>
<td>75</td>
<td>79</td>
</tr>
<tr>
<td>Average area/occupant, m²/person</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>19,5</td>
<td>-</td>
<td>28,1</td>
<td>31,5</td>
</tr>
</tbody>
</table>

Table 1, KSH 2011. p. 78-84.

The three pillars of sustainability

One of the interpretations of sustainability define it along three pillars, distinguishing economic, environmental and social sustainability (Fleischer, 2007). We shall go on now to analyse sustainability accordingly.
What are the characteristics of housing sustainable in the economic sense?

Sustainability in the economic sense means an economic approach accompanying the whole lifecycle of a house and responsibly using resources during its construction, maintenance and demolition as well. The key concept of the construction phase is affordable housing (Bramley 1990), meaning that the construction finance meets the needs of various social strata in line with their income respectively. The layered structuring of society and the wide variety of the human composition of households require differentiation within housing. Housing-related issues of the social strata with low and high income are to be solved with various means discussed here in details later on.

The maintenance of housing embraces the renewal of the housing stock, the renovation and maintenance of homes as well as their demolition all throughout the life-cycle of the buildings. The majority of residential buildings in Hungary are in poor structural conditions, as in most cases the owners have no systematic concept and there is no comprehensive legal regularization for their long-term renovation or maintenance either. As a result of housing privatization after the change of the political system, 97% of flats (KSH, 2011 p. 42.) are private properties now. However 20 years passed, tenants still fail to possess responsible owners’ approach to the renovation of their homes. More often than not, their low income makes renovation projects more difficult, and they keep fostering the post-socialist expectations that the caretaker state should tackle these issues.

In the phase of demolitions sustainability embraces the reutilization and recyclability of materials and the energy-demand of demolition processes.

The economical land use, the relatively low specific costs of constructing public utilities, the identical floor-plans and modest dimensions of houses, the less extensive elevation surfaces needing revetment and low costs of maintenance make low-rise high-density housing considerably more economical than family houses of the same parameters (Timon 1982).

What is environmentally sustainable housing like?

Environmental sustainability is also interpreted here for the entire lifecycle of the buildings concerned. During the construction phase it requires the least possible harm done to the environment and existing wildlife, respect for natural values on the one hand, while on the other hand the minimalization of incorporated materials and the environmental load from technologies applied. This approach prefers
the use of local building materials producible with modest energy-demands presupposing the reasonable and economical utilization of environmental resources (Lányi 2010).

We calculate with the environmental load from the building in the maintenance phase. The dimensions of flats and thus the costs of their maintenance have significantly grown throughout the past century as a result of increased convenience demands. In the 18th century, for instance, it simply did not occur to people to heat their home up to 22-24 °C. Sustaining to satisfy demands means increasing loads both financially and environmentally. A great challenge of our time is to decrease environmental loads and facilitate the shift over to renewable energy resources. We tend to expect solutions to these problems from engineering, but the tools of technology are not enough in themselves. There is also growing demand for traditional construction technologies. It is true that the maintenance of buildings built from natural materials needs more human labour as well as continuous caretaking, but opposed to those built from artificially produced materials, they are less harmful to human health and more sensitive to aspects of natural shading (orientation, planting trees) and energy-conservation. The trend of traditional housing is fostered by the aspiration to grow independent of technology and the attraction to the roots of local culture.

Via their garden accesses, low-rise high-density developments can guarantee higher standards of housing than apartment blocks. Besides, communal surfaces also allow for an emphasis on collectively used natural environment. Having garden accesses and yet being of high-density, this type of housing simultaneously creates conditions for co-existence with nature and society. Thanks to the low-rise design, environment-friendly materials and traditional construction technologies are easy to adapt. The demolition of the structure and its recycling is also viable in an environment-friendly way. As this kind of housing is born out of collective ambitions, regulations to upkeep it are also easy to integrate (e.g. annual redecoration, regular maintenance).

What is socially sustainable housing like?

Concerning existing housing, the concept of social sustainability is the least often discussed one of the three pillars today. Housing as such primarily satisfies the needs of society. Social values were pushed into the background during the past few decades driven by market competition and a Zeitgeist refusing socialist principles, whilst individual growth and competitiveness are now prioritized. Problems resulting from overdriven competition now return us to the roots to revise social tendencies. The Hungarian National Council for Sustainable Development (NFFT) has found the underlying cause of environmental challenges in the crisis of social values. Driven by the market, our communication-based world prioritizes consumption above all. The structure of values defines the superstructure of society as such. When it comes to knowledge, we prioritize technical information at the expense of those necessary to sustainably use our environment. The side-effects of consumers’ society do appear – such as increased environmental loads, social polarization, the intensification of competition, the alienation of people. (NFFT 2009, p. 18-21)

The tendency of our man-made environment to segregate also reflects social crisis. In our economy oriented world a flat is the highest-valued market product – while social approaches treating housing as the homes of families, the basic units of society or as the living areas of a healthy society are pushed into the background. Market-driven approach intends to equate welfare with well-being in order to increase profit. However, it is important to distinguish them apart, well-being has to do with people’s positive feelings whilst welfare is associated with material gain. Beyond satisfying basic needs, well-being grows in relation to cultural and social values. (Tiderenczl 2001).

The advantage of suburban garden housing for society is evident, it allows tenants to have privacy and aspects of communal life to be more emphasized. Houses are directly linked to the street, public domain, which reinforces the feeling of personal responsibility as tenants are more intimately attached to their environment which in turn encourages social co-operation. Front gardens make it easier to foster human relations, whilst the separate units of the multi-apartment buildings encourage
segregation even though there is less tension caused by co-existence. Opposed to the scattered development of detached houses with greater distances between them, those organized around communal areas make it easier for tenants to co-operate.

2. Housing conditions and the history of low-rise high-density housing in Hungary

The existing housing in Hungary has undergone significant development since the early 20th century when houses typically lacked any kind of comfort. Following the housing shortage after the destruction of the great wars, now the number and average comfort level of homes meets the needs of the population. However, the situation is somewhat ambiguous considering the distribution and standards of housing. As mentioned before, the percentage of substandard housing was 13% even as late as in 2005 (KSH 2006), and statistics do not cover the structural conditions of these buildings.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of homes in total</th>
<th>Number of newly-built homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>1,826,771</td>
<td>-</td>
</tr>
<tr>
<td>1930</td>
<td>2,182,499</td>
<td>-</td>
</tr>
<tr>
<td>1941</td>
<td>2,397,625</td>
<td>-</td>
</tr>
<tr>
<td>1949</td>
<td>2,466,514</td>
<td>-</td>
</tr>
<tr>
<td>1960</td>
<td>2,757,625</td>
<td>58,059</td>
</tr>
<tr>
<td>1970</td>
<td>3,118,096</td>
<td>80,276</td>
</tr>
<tr>
<td>1980</td>
<td>3,542,418</td>
<td>89,065</td>
</tr>
<tr>
<td>1990</td>
<td>3,853,288</td>
<td>43,771</td>
</tr>
<tr>
<td>2001</td>
<td>4,064,653</td>
<td>28,054</td>
</tr>
<tr>
<td>2011</td>
<td>4,382,894</td>
<td>12,655</td>
</tr>
<tr>
<td>2012</td>
<td>4,393,631</td>
<td>10,560</td>
</tr>
<tr>
<td>2013 <em>expectable</em></td>
<td>-</td>
<td>4,850*</td>
</tr>
</tbody>
</table>

Table 2 (KSH 2011) *estimated, based on 1st quarter

As a result of the economic crises, the building sector reached an unprecedented minimal in Hungary. In 2012 the number of homes built barely exceeded 10,000 and this tendency is expected to continue as data of the first quarter in 2013 show. (In 2001 more than 25,000 family homes were built, whilst in the socialist era large-scale projects produced as many as 100,000 per year.) Building so few houses means that we are soon to face a critical ageing of the existing housing. Professionals agree that the average life-cycle of housing in Hungary is 100 years (protected historic buildings are maintained longer, whilst poor-quality ones are demolished sooner). In Hungary there are approximately 4 million family homes now. A quick calculation proves that 40,000 new flats should be built annually to sustain the present-day standards of housing (Márácz 2012). Statistics of 2012 show that the existing 4 million family homes could only be renewed in 400 years’ time resulting in deterioration of an extraordinary degree.

![Figure 5](image-url)

figure 5
The fluctuations of the diagram above illustrate that housing projects today in Hungary are realized in waves. Housing policy programmes allowed for the construction of a large number of flats, but such booms were typically followed by downturns. Buildings constructed in the 1920s and 30s are approaching their centennaries, and maintaining them is quite a challenge. However, the ageing of the 70-80,000 family homes built annually during the largest housing boom of socialism between 1960 and 1990 will probably challenge us in the 2060s and 2080s, calculating with their lifecycle of 100 years.

Geographically, the majority of century-old houses erected in the 1920s are found in towns and cities, whilst the homes built during the socialist system are on urban outskirts or were developed as independent industrial towns. As a post-socialist country, Hungary also faces the problems of maintaining the numerous poor-quality homes inherited from the past. The renovation of prefab ones has been solved to only a small percentage, but the state has no strategy for their planned or systematic demolition and replacement yet. Although they are predominantly private properties, no solution can be expected from their owners.

The diagram clearly shows that the sudden rise in housing coincides with housing assistance programmes. When houses built during the socialist system complete their 100-year lifecycles, related issues will enormously burden the generation active and tax-paying then. To prevent this, it would be reasonable to work out a long-term housing assistance strategy guaranteeing continuity and a more evenly regeneration of the housing stock instead of booms (blue line instead of red line).

After surveying the context of housing in Hungary let us return to low-rise high-density housing the long-term planned construction of which in the urban agglomeration might offer an alternative of affordable housing with rising land prices. We are to analyse 9 examples of housing estates of the past 120 years in chronological order briefly describing them and assessing their economic, environmental and social sustainability according to aspects previously defined.

Economy-wise, we are considering the financing of construction, economicality of land utilization (flat/hectare), average floor-area, affordability of housing and cost-efficiency of their maintenance. Environmentally, we shall deal with the respect to natural environs, environmental damages caused by construction, environmental loads from maintenance. Social-wise, we are concerned with the emergence of communal considerations, meeting the cultural needs of society, social presence and participation during the maintenance phase.
Low-rise high-density housing estates preceding World War II

Dating back to the era before World War II, our first three examples are housing estates constructed by a state-run institute or company.

Railway workshop housing estate, MÁV (Hungarian Railways), Budapest

In the late-19th and early-20th century, the Hungarian Railways had a number of worker’s housing estates built for its employees on the fringes of the capital. One of them is the example discussed here with plans dated from 1895. By building family homes for its staff the company had a safe way of bonding employees, whilst keeping their wages low.

Being a company structured as a hierarchy, MÁV had strictly separated the levels of its staff hierarchy to maintain disciplined working. This social separation is reflected in the housing estate primarily meant to house blue-collar workers and secondarily clerks. Constructed after standard designs by MÁV, these family homes had identical floor-plans and elevations.

The company financed the construction project by using a loan from the capital of its own pension fund. Being a state-owned company, it had no difficulty in acquiring building sites. The loan from the pension fund could be financed by economizing on the low wages of its employees and rents (Körner 2004). The variety of housing types ranged from single and semi-double units in single- and multi-storey buildings for workers, semi-double- and double-roomed ones in two-storey houses for clerks. As opposed to the construction project, the system of housing maintenance remained non-detailed, which is reflected in the poor conditions of the structures now. The houses privatized after the change of the political system have partly been modernized by the owners to the extent of their financial means and according to their individual needs. Once integral, the housing estate now impresses us as more like a patchwork.

The percentage of green surfaces on the housing estate is 30 %. MÁV prioritized public institutions when constructing the estate, whilst ‘greening’ the site was regarded as of minor importance. The single-storey houses have modest-sized gardens.

At the time of its construction the housing estate was integral socially, sharing the same workplace, occupants came from the same social stratum. The site had its own state-funded school, consumers’ co-operative shop and a doctor’s surgery. To meet hygiene needs, a building for public baths was built discreetly on the periphery of the housing estate. As a result of privatisation following the change of the political system, the social composition of this community changed. Dwellers share a kind of provincialist approach without having a collective ambition to maintain or renovate their homes. The strict corporate system of MÁV could foster an integral intention necessary for construction projects, but after its termination there was no self-organizing structure integrating the private dwellings to replace it and orchestrate modernization projects. The housing estate and its public domains were left to their fate without caretaking owners.
Wekerle Housing Estate, Budapest

Built before World War I, this housing estate reflects the influence of the internationally recognized approach of the English garden city movement initiated by Ebenezer Howard to introduce a new suburban lifestyle combining the benefits of urban and rural living. Howard set a remarkable model for financing housing in the modern sense of economic sustainability. He maximized profits from the construction of suburbs and invested the extra proceeds in creating communal areas. (Nagy 2008)

In more than one sense, this housing estate is a follow-up of its English prototypes. Facing contemporary housing problems, Sándor Wekerle, then Minister of Finance initiated the construction of a nice ‘village in the city’ in 1908 on the outskirts of Budapest to actually establish a compact society within the city. To guarantee high standards, the tender conditions prioritized cost-efficiency, simplicity and artistic design. Approximately 4,700 family homes were built here for employees of MÁV and the national post-office after 29 standard designs, typically with two rooms, only 10% of them had one or three rooms. (Körner 2004)

The Ministry of Finance planned the construction to be financed as based on market conditions and calculated with the workers’ wages and affordable rents. The Home Building Act of 1908 allocated a big amount of loan exclusively to solve the housing issues of state workers and employees. Rents were kept tax-free as long as the homes remained state properties. After the change of the political system 97% of the houses were privatized here. Owners thus renovate them to various extents. There is no replacement for the integral corporate system that could organize and finance maintenance.

In line with the English prototypes, natural environment and suburban features were the priorities of designs. Homes typically have larger independent gardens, the streets are flanked with trees, the public institutions are positioned along landscaped public domains. The environment has been tended and well-kept ever since.
Workers and clerks moved in here after the completion of the project. Many public facilities, such as schools, public institutions, shops and community buildings were built for their purposes. Initially prioritized, cultural life has been flourishing ever since. The Wekerle Association contributes to the integrity of the community by its active participation and organizing several programmes.

Albertfalva Park Village, Budapest

Designed by Béla Barát and Ede Novák, co-designers of the main square in Wekerle housing estate, this project was launched by OTI (National Social Insurance Institute) to provide housing for its employees in Budapest. Planned to be constructed in several stages, 218 two-, 55 three-, 34 four- and one single-room family-homes were built during its single realized phase completed in 1929. Prioritized by the designers, an integral development was born articulated by the rhythm of porched entrances mirrored in pairs (Nagy 2008).

As an act passed in 1928 allowed for the pension organisations to invest 30% of the contribution base of the pension reserve in housing, OTI launched its housing project, relying upon tax incentives with the intention of low-budget investments to increase proceeds. Homes of the housing estate were privatized after the change of the political system, leaving maintenance issues to be tackled by the owners. As a result, the conditions of houses are mixed, some have been upgraded, while others are run-down.

Landscaping was an important aspect of designs here too, although less emphasized than in the Wekerle project. Homes have front gardens as well as a rear kitchen garden. Streets are lined with trees, and there is a well-groomed park in Abádi Square organizing communal functions. Green areas make up 35% of the whole site.
Socially, the housing estate was integral initially, as employees of OTI moved in here. The social composition of the owners was changed after privatization. Although there is now a community centre and a landscaped playground in Abádi Square, there is no communal co-existence and no organization or association to organize life. Maintenance and modernization takes place on individual initiatives, without a future perspective of an integrated financciation for such projects.

The three housing estates were financed in a similar construction, with a substantial sponsoring from the state. Depending on social status, homes of various sizes and comfort levels were built: for MÁV workers one roomed, for officers two roomed flats, in Wekerle two- and three roomed, in Albertfalva two-, three- and four-roomed homes for clerks after World War I. To enforce an integrated intention, maintain and modernize these houses meant quite a challenge everywhere after the privatization, especially for low-income worker families living on MÁV housing estate.

**Low-rise high-density housing from the socialist era**

The issues related to housing shortage after the destructions of World War II were not efficiently resolved in the 1950s. Few homes were built, typically of low standards owing to the lack of a fully operating building industry. As housing came in focus by the late 50s, the Party’s Central Committee passed a decree to liquidate the shortage. (Körner 2006). Socialism completed two 15-year housing programmes adjusted to the 5-year periods of economic planning from 1960 to 1975, then from 1975 to 1990. In large-scale housing projects multi-storey houses with prefab technology were priorities, but also private and cooperative housing constructions were licensed.
As the housing shortage was to be tackled in the thirty years, whilst housing demands increased, low-rise high-density housing was more and more preferred thanks to the activities of the Private Housing Target Programme Board (Magánlakásépítési Célprogram Bizottság) and the spread of housing investments managed by OTP. All three examples from this period were initially built as free-hold ones using the highly advantageous loans from OTP. With regard to the cause of the disabled, the housing estate in Pesthidegkút was co-financed from other donation resources as well.

Terraced housing, Perbál

This housing estate was built on the initiative of the Cooperative Association in 1973 for its employees after designs by Tamás Maros, who lives here himself. Originally meant to embrace 90 family homes, a total of 60 terraced ones were built here in groups of fives with an average basic area of 83 m² and a surprisingly small tract width of 4.2 m (Timon 1982). Relying upon the lessons taken from international prototypes, this project offers sensible and affordable housing meeting contemporary needs.

Built as free-hold flats, these family homes were marketed with an entry price (equalling the price of a car then), besides, OTP (National Savings Bank) offered favourable loans payable in instalments for 25 years charging 3%-interest. Tenants were solvent middle-class people. The present market value of these dwellings is approximately 165,000 HUF/m² (550 EUR/m²). Designs of the elevations were governed by an economical approach omitting decorations that would have increased construction costs. Distant-heating pumped the costs initially, but occupants have upgraded the system by now. Despite the rural context, designs were defined by the principles of urban environment-shaping, each dwelling unit has 30 m² garden on one side and a paved terrace on the other. As a potential way of rural garden utilization, small market gardens were separated from the flats experimentally as lands covering 100 m²/flat within a few minutes’ walking distance mainly to ward off the smell of pet animals (Magyar Építőművészet 1975/2). The leftover areas of the housing estate were converted into communal greens. The programme does not cover landscaped communal spaces.

Designers had communal functions in mind, but solutions pumping the prices did not emerge. The sixty flats were meant to be completed with shops, a club and a day-nursery that remained only on blueprints.
In 1981, the International Year of Disabled People a housing estate was built for the disabled in Pesthidegkút. The project was initiated by the Budapest Committee of the KISZ (Communist Youth Association) with extensive central and social participation after designs by Tamás Dévényi and Judit Hámory (Chikán 2001). Terraced houses are organized here along a vertical system in groups of fives. Of the initially targeted 95 flats only 54 were constructed (MÉ 1987/1) to house seriously handicapped young people who had previously lived in institutes for the disabled offering them the chance to live independently as well as to have on-site workplace.

The project was facilitated by both political and social support, with designs initiated by the KISZ and approved by the Committee of MSZMP (Hungarian Socialist Workers’ Party). The terraced houses were meant to function as free-hold flats, thus occupants applied for loans or paid in cash. Construction was supported multilaterally. The Municipal Government offered the site free of charge, heating and sewage systems were provided by the companies as investments of their own, whilst plumbing was installed in voluntary work. (Egalitas, 2012).

The designer developed the plot economically, resulting in 30 flat/hectare housing density with units of approximately 60 m² floor areas. (Chikán 2001). The moderate sizes provided affordable housing for the disabled, but maintenance proved challenging even so, employment was problematic for the handicapped tenants whose invalidity pension did not cover the costs of living on their own. To find a solution, on-site workplaces for data-processing were created. Although they have been terminated since then, employment is luckily continued by two enterprises.

Environmentally, the designer was concerned with the conservation and caretaking of nature and thus planned landscaped areas in-between the houses with front gardens. Although the shortage of resources compromised designs in this regard, now there is a nicely landscaped area with mature trees well-kept by the community.

Socially, the housing estate is an exemplary model. Both the co-operation of the groups participating in its construction and the foundations and enterprises contributing to its maintenance prove that there is now a live community based on trust.
Páva Street, Győr

Built during the period of the second 15-year plan, this housing estate was designed by Károly Jurcsik. From the 1970s on, low-rise high-density housing projects were also significant parts of the upgrading of plan packages coupled with prefab technology. Housing companies expected to exploit their unused capacities from such projects, whilst designers hoped for the construction of housing guaranteeing higher life-quality. Completed in 1980, this development is made up of 55 flats in two-storey chainhouses (MÉ 1985/3).

Managing the Győr-based housing company, the Győrmegyei Állami Építőipari Vállalat (state-run Building Company of Győr County) and the Északdunántúli Tervező Vállalat (North-Transdanubian Designing Company) launched an improvement project in 1980 to expand the variety of their prefab products. As part of this, the type-planning of terraced houses started in Győr in the same year allowed for construction. With OTP as the client, smaller flats of 78 m² and larger ones of 113 m² were constructed (Körner 2006). Prefab technology did not allow home-made construction. Housing density of the site is 34 flat/hectare.

To include gardens was an important concern for the designer. Flats have both a front garden and a private covering 50 m². Cars can be parked in the linking chain tracts and thus leave more parking-free green surfaces in the public areas. The heart of the site is a landscaped square.

Prefab technology did not allow for communal participation at the time of construction. Being parts of the designing programme, communal functions were focussed in the centre of the site.
These examples are results of the systematic private housing programme of the socialist era. The increasing demands for ever larger and higher-quality housing evidenced by the projects in Perbál and Győr respectively were general phenomena during the two periods of planning. As soon as the newly built flats solved the issues of housing shortage, there were new demands for larger and more comfortable ones.

Low-rise high-density housing from the period between the change of the political system and global world crisis

The next three examples of housing were built in the post-socialist era, after the change of the political status quo, but preceding the global crisis. Towards the end of socialism, the country struggled hard to meet the targeted, unsustainable pace of production. State participation in financing housing projects gradually decreased in the 1980s till the 1990s when it withdrew from the sector joined by OTP, the bank sponsoring the majority of investments in housing until then (Körner 2006). After the change of the political system in 1989 Hungary had no comprehensive housing policy. Short-term programmes alternated till 2000. The year 2001 saw the emergence of the new housing assistance system (Széchényi Plan, National Development Programme) resulting in a boom of housing projects terminated by the new government in 2002 owing to excessive budgetary loads.

After the withdrawal of the state, the appeared developers were interested in the maximalization of returns and marketability and thus approached housing as a high-value product associated with marketing activities. As the state and local governments were now less active in housing projects,
communal considerations could not emerge. Investors in park-housing specialized in designing the utilization of the plot neglecting its inclusion in the environment and the adjustment to character. Developments tend to be inconsistent and island-like, built-up as densely as regulations allow, while designers are overburdened with the speculative investor expectations.

Víznyelő Street, Budapest

Built after the change of the political satus quo, in 1992 in Budapest, this residential complex is made up of 12 atrium houses contracted, designed and constructed by one and the same person, the architect János Mónus (MÉ 1995/1).

The architect’s own enterprise financed the project ambitioning to realize purely professional standards. Structures include state-of-art materials and solutions sustainable at low costs. The two-storey flats with 140 m² floor area are targeted for the upper-class with their high prices of 410,000 HUF/m² (1360 EUR), which is surprisingly excessive, as in Budapest family houses with larger plots fall in the same price category.

Designing focussed on natural environment as one of the priorities, which is justified by the separated accesses for pedestrians and motor vehicles, the green pedestrian access, the atrium gardens and the wooden lattice fences enveloped in vegetation.

As no communal functions belong to this development, it shares solutions more typical of apartment houses. By fully dividing and developing the plot, an island-like complex was born appearing inorganic in its surroundings.
Barlang Street, Budapest

Financing the project was guaranteed by OTP Real Estate commissioning architects Ferenc Keller and Ferenc Cságoly to design marketable luxury flats on one of the most pricey part of Budapest, Rózsadomb in the Buda side. This development embraces 20 dwelling units of 125 m$^2$ each in terraced housing (Octogon 2001).

OTP Real Estate defined its expectations of designing 20 flats and the largest possible margins reflected in the prices, currently they are marketed for 600,000 HUF/m$^2$ (2,000 EUR). However, because of the large margins the simplicity of the elevations, the block-like masses and the materials used do not reflect their exorbitant current prices. Targeted to be a luxury category in line of the excellence of the site, it is the natural context that makes luxury more realistic.

Respect to the natural environs was emphasized by designers. The blocks including 2-4 units are adjusted to the terrain line, the garage to the street-front, flats are connected by pedestrian accesses within the site as damage to the terrain was minimalized. Buildings border small private gardens, otherwise they are enveloped in intact landscaped natural environs.

Communal functions and ambitions are not included in the designing programme as opposed to the prioritization of privacy adequate for luxury demands, the private gardens are divided off by wooden lattices and the buildings are oriented to eliminate see-throughs.
Venezia Villa Residence, Velence (30 kms from Budapest)

Architects Tamás Perényi and Gyula Fülöp were commissioned to design this housing estate in 2008 to develop a total of 71 plots in Velence by building 2-4 homes on each plot with a basic area ranging from 80 to 150 m².

The investor asked to design type-plan, for which some 20 various residential buildings designs were made. The first few buildings built were taken as models after which the investor marketed the plots with the residences built after the plans chosen by the clients. The average price of housing here runs between 320-400,000 HUF/m² (1,100-1,300 EUR).

As for landscaping, architects had strong views and regarded the Wekerle housing estate as the prototype. Residences have independent gardens of their own, and there is a landscaped communal area bordering the site from the west. In compliance with the aspects of environmentally conscious designing, solutions approaching those of passive houses were employed. The environment is organic as a modest overall impression is guaranteed by the integrity of the type-plan package.

Plans focussed communal aspects on the western periphery of the site in groups of plots with mixed functions. Houses on the same plot have a joint pedestrian access route. As homes here were constructed and purchased one by one, there was no initial intention to co-operate or to outline joint regulations of maintenance.

figure 39-42
The three housing estates were born out of the motivation of entrepreneurs driven by profit-orientation. The participation of the state or local government only prevailed via construction mortgage loans for private individuals without their presence to enforce communal intention.

After the change of the status quo, the participants of the market proved to be beginners in more than just one sense. There were no clear-cut needs and unambiguous agreements either on the supply or on the demand side. Higher standards generated by the market were sometimes achieved, but the high margins also pumped prices without matching standards. Surprised by liberty all of a sudden, clients in the post-dictatorial era had no conscious demands of their own, and did not actively participate in influencing market supply. No comprehensive system to manage maintenance was produced during this period, and the main contractors only consider the most superficial aspects of social sustainability. Housing of this era neglected the depths of this issue.

To finish this chapter, let us see a grid summarizing the examples of the three periods in terms of the dwellers, dimensions of homes, and the present-day market prices of housing.

<table>
<thead>
<tr>
<th>Estate</th>
<th>Year</th>
<th>Dwellers/ Social stratum</th>
<th>Dimensions of homes (number of rooms/ m²)</th>
<th>Present-day value (Ft/m², EUR/m²*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railway workshop housing estate, MÁV</td>
<td>From 1895</td>
<td>MÁV employees and noncom officers</td>
<td>single-room (worker) double-room (clerk)</td>
<td>180 000 Ft/m² 600 EUR/m²</td>
</tr>
<tr>
<td>Wekerle Housing Estate, Budapest</td>
<td>1908-1913</td>
<td>employees of MÁV and post offices, clerks</td>
<td>double-room 40-60 m²</td>
<td>140 000- 280 000 Ft/m² 460-950 EUR/m²</td>
</tr>
<tr>
<td>Albertfalva Park Village, Budapest</td>
<td>1929-1933</td>
<td>employees of OTI</td>
<td>double/ three/ four room</td>
<td>300 000 Ft/m² 1 000 EUR/m²</td>
</tr>
<tr>
<td>Terraced housing, Perbál</td>
<td>1973</td>
<td>workers of cooperatives, middle-class</td>
<td>83 m²</td>
<td>165 000 Ft/m² 550 EUR/m²</td>
</tr>
<tr>
<td>Housing estate for the disabled, Pesthidegkút</td>
<td>1981-1983</td>
<td>disabled</td>
<td>60 m²</td>
<td>-</td>
</tr>
<tr>
<td>Páva Street, Győr</td>
<td>1980</td>
<td></td>
<td>78 m² 113 m²</td>
<td>-</td>
</tr>
<tr>
<td>Viznyelő Street, Budapest</td>
<td>1992</td>
<td>middle-class</td>
<td>140 m²</td>
<td>4 100 000 Ft/m² 1 360 EUR/m²</td>
</tr>
<tr>
<td>Barlang Street, Budapest</td>
<td>2001</td>
<td>upper-class</td>
<td>125 m²</td>
<td>600 000 Ft/m² 2 000 EUR/m²</td>
</tr>
<tr>
<td>Venezia Villa Residence, Velence</td>
<td>2009</td>
<td>middle-class</td>
<td>80-150 m²</td>
<td>320 000- 400 000 Ft/m² 1 100-1 300 EUR/m²</td>
</tr>
</tbody>
</table>

Table 3, *calculating with 300 Ft/EUR, source of prices are actual real estate portals
3. Low-rise high-density housing and the social vision

*The vision of society*

„Architecture is the will of the age conceived in spatial terms.‟
/Mies van der Rohe/

After surveying sustainability, the existing housing in Hungary and the precedents of low-rise high-density housing let us now turn to the potential vision of group housing. The ongoing economic crisis makes us face numerous questions, society must revise its goals and the directions of its development while recreating its values.

Low-rise high-density housing is designed for the future society. But what is the vision of Hungarian society like? We shall now rely upon the Workshop Study of the National Council for Sustainable Development (NFFT 2011) as an experimental base which in 2011 outlined the demographical vision of Hungary by analysing data of social changes in 2011 comparing them with those of 1990 and 2001, occasionally even earlier years. This study tracked tendencies as follows.

1. Regarding fertility tendencies and family policies, an overall European trend is that owing to the employment of women child-bearing tends to be postponed, resulting in the decrease of birthrates as fertility is compromised with ageing. The number of children actually born is considerably less than those planned (NFFT 2011 p. 12-32).

2. Relationships are also undergoing changes. Whilst marriages had prevailed previously, the percentage of co-habiting, divorced and single people has considerably increased by now, which in turn decreases the number of would-be children as birthrates are significantly lower among parents living in partnership than in marriages. This phenomenon also influences the instability of relationships resulting in the spread of single-parent families (NFFT 2011 p. 33-49).

3. The changes of the family structure goes hand in hand with those of relationships. The rate of single-person households shows significant growth, especially affecting single women and widowed elderly people. The percentage of families of married people has decreased, whilst the number of co-habiting and single-parent families is on the increase. The scale of different family models keeps widening, which means that more and more children experience single-parent families or co-habiting with step- or foster-parents till they come of age. (NFFT 2011 p. 50-60).

4. The study emphasizes aspects of health conditions and mortality rates owing to heart diseases and the consumption of poor-quality alcoholic drinks as they show significant deviation compared to European data. As they are less relevant to housing issues, we are not discussing them in details (NFFT 2011 p. 61-85).

5. Concerning ageing tendencies, the decrease of birthrates is significant as it results in the overall ageing of society. This phenomenon is quite a challenge for the ever-decreasing active employed population as well as for the maintenance of the pension scheme, the social healthcare and benefit system. Multi-generational families are not typical, the elderly tend to live in single- or two-person households, the upkeeping of which is more often than not problematic, especially for single elderly women (NFFT 2011 p. 86-105).

6. The rate of international migration is low in Hungary compared to European tendencies. Inward migration is typical of the Hungarian-speaking population of the neighbouring countries. Since joining the EU, outward migration has been intensive, but there is no comprehensive statistics on emmigrants and recently appearing immigrants either. (NFFT 2011 p. 106-129).

7. As the exact number of the Gypsies (the Romani people) living in Hungary is unknown, it is difficult to describe their socio-demographic characteristics. As a rule, they have higher birthrates and
their population is much younger than the Hungarian majority. Relationships are generally started at a tender age. Child-bearing is typical in their teens, women in their 20s usually have 2-4 children. Marriage is not typical, partnership is widespread and divorce is quite frequent. (NFFT 2011 p. 130-139).

The future of low-rise high-density housing in terms of social sustainability

As economic and environmental sustainability has been a topic discussed for a long time by professionals, we shall now focus on social sustainability receiving less attention. Referring to the statements of the study, we shall analyse the potentials and perspective of group housing considering changing social tendencies. We are not dealing with point No. 1 and 4 separately, as their impact on housing issues is found as integrated in the other points. We shall omit discussing point No. 6, as the data we received about it is insufficient.

2. and 3. Changes in relationships and family models – „swallow-houses” and the revitalization of cooperative housing

Housing is affected by the changes in relationships and family models in more than one way. To help young couples so-called swallow-houses and housing campaigns would offer solutions as they rely upon steady co-operation in the long run. Actually there are already schemes in Hungary whereby young couples moving in find low-budget housing much like in dormitories, and have to pay compulsory savings besides rent. In a few years’ time when having the necessary minimal resources of their own to buy a home, they can enter the housing market to establish their long-term housing conditions.

The second model could offer solutions for people moving out from the swallow-houses or young couples with other resources of their own. This scheme would follow the example set by cooperative housing financiation during the socialist system. Couples could cooperate in group housing contributing to it with self-resources and long-term instalment loans sponsored by the state. The sense of belonging could in turn affect the stability of marriages and facilitate family plans.

Whilst in the case of swallow-houses, a building like a dormitory would suit, for the second (cooperative) model low-rise high-density developments seem to offer ideal solutions. A garden of their own is especially favoured among families with young children, but the same environment also has the potentials for a parent staying home with socializing needs. As such housing estates are cost-efficient, their prices guarantee their affordability.

5. Ageing – constructions of nursing homes

As the percentage of the elderly grows, and the number of multi-generational households typical of villages decreases, old people tend to live in single- or two-person households. Owing to the low level of housing mobilization and the lack of its social acceptance, they typically stay in unaffordably large homes that they cannot upkeep with their modest income. However, their flats do not only financially burden them, hardly any of them is made accessible to the degree they need. To tackle this phenomenon, a large number of nursing homes have been built in Hungary recently, but usually in areas separated from society and offering so far the only solution to the problem.

The social exclusion of the elderly has no evident advantages. Their presence and sharing of their life experiences is by no means valuable for the young. To differentiate opportunities, it would be important to establish mixed residential zones where the young could integrally co-exist with those having families and the elderly, all living in homes meeting their individual needs. Such a construction would facilitate housing mobility too as moving on within the site would not compromise local
patriotism, whereas needs changing with the passage of life could be satisfied. A mixed housing could offer the elderly single-floor fully accessible flats. The development in Pesthidegkút, presented before, designed by Tamás Dévényi would be an exemplary prototype. This project is possibly viable as private housing but would be more advantageous to reinforce rental housing sector and thus housing mobility. However, such a large-scale development requires the participation of the local or national government, along with private individual major investors.

7. The Roma population – workers’ housing

The previous examples prove that low-income social groups are unable to maintain housing out of independent financial sources. This situation shows the lack of rental housing the most intensely. The biggest losers of the system change are the Roma people. A high percentage of the Gypsy (Roma) minority lives in poor-quality housing and segregation. Not much has been done to tackle these issues since the change of the political system, segregation tends to grow, sometimes affecting whole areas. The employment and housing issues of the Gypsies are unsolved. Their majority is unemployed, and large populations live in substandard housing.

Launched in 2013, the public works programme is targeted to employ Gypsies in agriculture. Compared to the difficulty of the task, it demands lots of energy from training the multi-generational unemployed people through guaranteeing job opportunities to having the programme accepted by society. As it is part of a long-term programme, it could use early 20th-century low-rise high-density housing as exemplary prototypes. A state-funded institute or company set up for agricultural works could construct homes for workers through tax exemptions. Houses could be built with small floor areas but reliable standards. When planning, it would be important to calculate with long-term maintenance to prevent the deterioration of houses. Maintenance could be guaranteed by supportive systems in keeping with manual-like regulations.

Let us return to the statement made in the beginning, saying that the spread of low-rise high-density housing would be advantageous for society. It is true beyond its economic, environmental and social potentials as it could widen the variety of the housing sector resulting in adequate solutions in-between differentiated social groups and needs. Mention must be made here of the presently unresolved conditions of the urban agglomerations. Group housing with plots of moderate sizes in urban-rural fringes could provide families with more affordable housing. In overcrowded urban situations, where a change counteracting tendencies of the market and economy would be adviseable, the national or local government could intervene to relieve overstrained developments.

Covering the above, we can see the tendencies of the changes of housing needs that accompany the changes of life conditions. As private housing makes up 97% of the Hungarian housing market, which is coupled with a low level of housing mobility, old people typically remain in unaffordably large homes exceeding their financial resources, whilst the young ones are unable to move on from their small flats. It would be vital to have a rental housing sector to increase housing mobility and to meet housing needs changing with age. Besides, it could offer solutions to the housing issues of low-income or presently unemployed social groups.

Considering aspects of sustainability, modesty must be given priority once again in the housing sector. Sustainability in architecture is often identified with a more economical use of fossil energy sources. I chose not to emphasize this on purpose, as sustainability is a concept interpreted in a much broader sense. Appreciated as values once again, saving and moderation must be in the focus of the housing sector of the future in line with the three pillars of sustainability in economic, social and environmental sense, while making distinction between needs and demands exceeding them.
Summary

This essay follows a sweeping logic from the theoretical approach of sustainability and its three pillars through the conditions of Hungary’s existing housing to a potential vision of low-rise high-density housing there as reflected in contemporary social changes.

A precedent of contemporary Hungarian architecture, low-rise high-density housing in the early 20th century created exemplary models satisfying the housing needs of workers and clerks of state-run companies. The socialist era in the latter half of the 20th century produced a scheme of state-sponsored private housing constructions prioritizing the aspects of economical design and execution, allowing for community functions to some extent. Models after the change of the political system are examples of marketability, high architectural standards and economy-based equality. The examples of this century offer an excellent basis for us to learn from the previous generations and to tackle contemporary issues.

The lessons we learn from these examples guide us to contemporary issues of Hungarian society and the efforts in search of a vision in the context of the economic crisis. Undergoing transition, this society shows intensive tendencies towards individualization coupled with a growing number of single individuals and a decrease of birth rates resulting in an overall ageing of the population. The challenges of inward and outward migration, the steady growth of the Gypsy minority and their unresolved social issues are sooner or later exerting influence on the structuring of the existing housing whilst social tendencies also keep changing. When planning for long term, all these aspect are to be taken into consideration.

Home-building in the future must be based on the three pillars of sustainability, the moderate economic approach, the preservation of environmental values and social co-operation. If we let our life be driven by the ambition to meet our ever greater demands, we could lose collective trust as well as our values and cultures, resulting in the unstaiblity of society primarily based on families. Known and appreciated, these developments creating values came into being as a result of reasonable principles and social ambitions. I hope that our generation and the ones to follow shall learn from these examples and thus work out and sustain in the long run a model of housing also creating values.

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