

Paradigm shift or choke? The future of the Western European housing stock.

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Abstract (revised)

The 20th century saw an enormous worldwide growth of the housing stock. In particular the building boom after WW-II, during which the housing stock in most countries was multi-folded, focussed the attention of the housing sector primarily to the planning and realisation of new construction; the consciousness of the enormous maintenance and management task to come was still a far cry.

The begin of the 21st century shows a completely different situation that urges for a paradigm shift.

New construction in most western countries has faded down below an annual production of 1% of the existing stock, and often well below. Parallel to this, the ageing existing stock draws growing attention. The necessary investments in major repairs, renovation, adaptation and redevelopment count at present for a total turn-over well beyond that of new construction. Improving the energy efficiency to the required standards of tomorrow will give these investments a strong extra boost.

Though the change from new addition to the adaptation and transformation of the existing stock is well under way, large parts of the construction and real estate practice seems hardly aware and to stick to business as usual: new construction, if not in greenfields then in brown-fields. The knowledge about how and when to successfully maintain, manage, adapt, transform and redesign has still a way to go. At the same time, the awareness grows that housing problems are only partly related to the physical supply side and solving them requires more than bricks and mortar.

The paper illustrates the paradigm shift in Western Europe and explores the consequences for the future management of the housing stock.

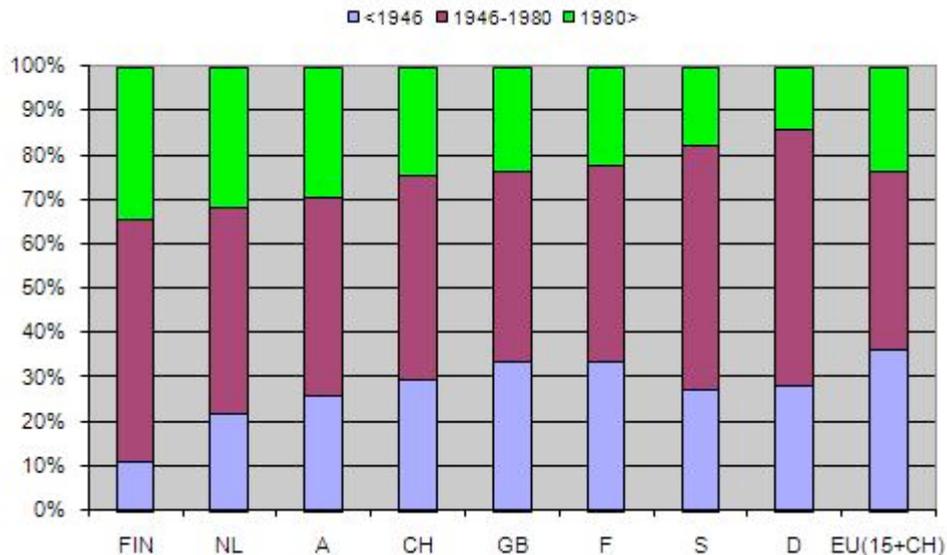
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1. Introduction

The 20th century saw an enormous worldwide growth of the housing stock. In particular the building boom after WW-II, during which the housing stock in most western European countries was multifolded, has shaped nowadays housing stock. As Fig. 1 shows, two-third of the western European housing stock is built after WW-II; in most western European countries over 60% of the stock - in some countries like the Netherlands and Finland even over 75% - is younger than 50 years and over half is younger than 30 years.

Fig. 1 EU housing stock, by Age (8 Western EU-countries + CH;



source Eurostat 2009)

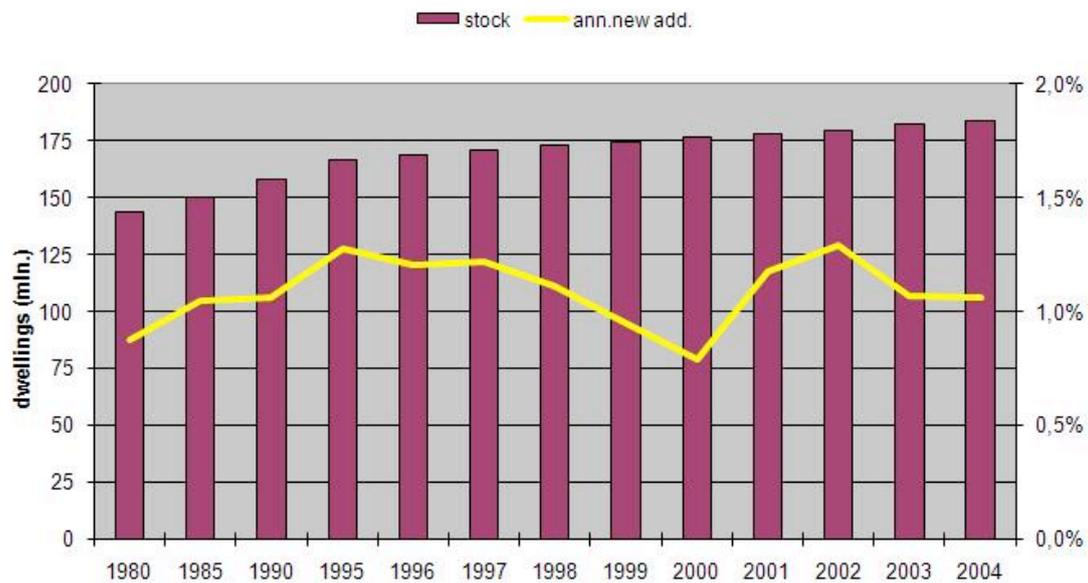
The causes for the building boom were, like in the Netherlands, generally 4-fold: a production backlog due to the economic crisis of the 30'ies, loss by severe war damage of roughly one third of the stock, an unprecedented baby boom resulting in an explosive growing housing need, gradually followed by rising housings standards and dwelling space consumption (Vreeze 1993). As a result, and despite massive new construction, crude housing shortages in the Netherlands continued till after 1990. In other countries like Denmark, the United Kingdom and France, war damage and the post war baby boom were less dramatic and/or resulted in a less massive housing production, and consequently in a relative older housing stock. But also in these countries the attention and attitudes of the housing and construction sector were primarily focussed to the planning and realisation of new construction; the consciousness of the enormous maintenance and management task to come was still a far cry.

The begin of the 21st century shows a completely different situation. As Fig. 1 shows, new construction in most western countries has faded down below an annual production of 1% of the existing stock, and often well below. As a consequence, the influence of new construction on the composition, quality and suitability of the existing stock is little and no longer a practical means to satisfy changing needs.

Though still relative young the existing stock is ageing. In particular the older part of the stock is increasingly facing deficiencies and shortcomings, large parts do not satisfy residents needs and preferences, are far from energy efficient and many post-war neighbourhoods are in trouble. Reliable comparative data about the volume of the qualitative backlog are scarce, but the available data show an ongoing need for reinvestment, in particular in energy efficiency (Itard and Meijer 2010). In the Netherlands, the total turn-over of major repairs, renovation, adaptation and redevelopment count at present for well beyond that of new construc-

tion(CBS 2010). Improving the energy efficiency to the required standards of tomorrow will give these investments a strong extra boost.

Fig. 2 EU housing stock, % annual new addition (8 Western EU-countries + CH;



source Eurostat 2009)

Though the change from large scale new construction to maintenance and improvement of the existing stock is well under way, the knowledge about how and when to successfully maintain a healthy housing stock has still a way to go. At the same time, the awareness grows that housing problems are only partly related to the physical supply side and solving them requires more than bricks and mortar. This shows the relevance of housing stock (and building stock and land stock) management as a vital assignment of both proprietors and governments.

This paper gives some backgrounds of the housing production and housing stock development in Western Europe, explores the consequences for the future management of the housing stock and discusses what it indicates for the next future. As previous coherent research on this topic is hardly available, the content has an explorative character, based on an abundance of only partly cited sources. It also bears the limitations of a macro approach: an average water depth of 1 cm gives no guarantee against drowning.

2. Backgrounds

The declining housing production in the past decades can have a variety of causes on the demand side, the supply side or the conditional context of the housing market. Though housing markets are largely specific, depending of country and region, most West-European countries show the same declining production, most probably due to the same or similar developments. The following description is in broad outlines based on the Dutch situation and sources(CBS 2010), but if not otherwise mentioned applies also to other West-European countries¹(Ball 2010; Eurostat 2010; Oxley 2004). Housing production is defined as the annual gross completion of new dwellings. This does not cover the annual growth of the housing stock, as a part of the new addition will compensate the annual loss by demolition, merging, loss, change of use and other subtractions.

2.1. Demand side causes

On the housing market, which is mainly a stock market, rising demand is the strongest thriving force for additional construction. In the past, the demand was mainly determined by demographic variables: at first the growth of the population, the main cause of the post war building boom; later after the family size started shrinking the growth of the number of households kept fuelling the demand up to now. In most West-European markets rude housing shortages have come to an end though, and some regions face even a shrinking demand. Apart from the demographic side, an additional more hidden cause is economic prosperity, enabling a growing housing - land as well as floor space - consumption. Although partly included in the family size reduction, the effect of dwelling stock reduction by merging or replacement is of growing importance, even in shrinking markets and declining populations. The housing need in most West-European countries has nevertheless declined to a much lower structural level than in the previous century, and if not, high land and property prices suppress the effective demand.

The disastrous effect on the building production of the recent economical crisis shows the building trade's vulnerability for fading consumers confidence and purchasing power.

2.2. Supply side causes

Supply side causes play another main role in the declining annual housing g production. In the first place, a nominal stable annual number of newly produced dwellings will mathematically result in a declining relative growth of the stock. But the number of completed dwellings was not stable but instead declined, as secondly the quality and character of the building production gradually changed. Due to increased building standards of e.g. energy efficiency, the quality of new dwellings improved substantially. And due to changed policy and market conditions, the character of the housing production changed from often subsidised, modest priced mass greenfield production, to increasingly differentiated and generally substantial larger and comfortable market directed production, increasingly in existing urban areas. As also the size of building plots grew and land prices increased, the average building costs swell accordingly and not seldom doubled. So even with a nominal stable investment budget the number of dwellings to be completed within that budget had to shrink drastically. Instead, most national housing budgets were drastically reduced, government subsidies cut and, as the market did not fill the gap, the housing production declined.

A third and perhaps most critical limitation lies in the limited available building production capacity, in particular the availability of adequately skilled construction workers. The last decades saw a steadily decline of new hardhats entering the West-European labour market, a development that puts its shadow over at least the next decade and is only partly compensated by supply from new EU member states.

A fourth and up to now hardly investigated macro economic limitation is the maximum available total payment capacity of a population for housing. According to a recent survey, the housing costs of Dutch families - tenants and owner-occupiers - have risen to the highest level in the EU (Ward and Özdemir 2009). This at least indicates the likelihood of substantial failing demand. Though in fact a demand side cause, the way housing developers anticipate on declining demand has direct negative supply side consequences.

A fifth cause often mentioned by the building trade are institutional hindrances by governmental regulations and bureaucracy, like building and planning regulations. On the one side the growing building and planning bureaucracy incontestably effects the progress of building production, on the other side it reflects the increasing complexity and public concern of the built environment with inevitable issues as sustainability and urban sprawl. Regarding the limited building capacity it is doubtful though to what extend these hindrances do cause a factual loss of production. New ways of integrated and digitally supported planning processes and decision making can otherwise considerably simplify procedures and shorten the procedure time.

2.3. Contextual conditions and constraints

Following the energy crisis of the mid seventies of the last century, the eighties saw a wide spread policy shift in Western Europe, shortly summarized in the slogan "less state, more market". This shift marked the end of large scale subsidised mass - mainly social - housing programs. As already mentioned above, this resulted in a much lower market directed production. But not only subsidies faded away, also the government's policy attitude changed from active steering to a more reactive market approach.

All together these causes make clear why and how the housing production declined as it did. As the decline went very gradually and generally took place simultaneously with a range of other changes in the housing and planning field, the effects did not get much attention up to now. The following section gives an overview on these effects and impacts.

3. Some consequences

The declined housing production has a range of consequences. The following overview, based on a wide variety of only partly mentioned sources, gives only an approximate indication.

3.1. Housing provision, housing quality and housing stock management

Compared with an annual dwelling production of over 3,5% like once in the Netherlands (1975), a production of 1% or less in the first place implies a crucial reduction of the changeability and adaptability of the existing stock by new addition and/or replacement,. As the volatility of the housing market demand is generally higher than 1%, changing market demands regarding quantity, quality, availability and suitability cannot anymore be solved by providing new additional dwellings but have to be accommodated in the existing stock. While the adaptability of the existing stock by renovation, transformation, addition, reuse and redistribution is much larger than often assumed (van der Flier and Thomsen 2005), the opportunities for substantial addition of extra dwellings by e.g. transformation and reuse of non-residential buildings is very limited. This as a matter of fact underlines on the one hand the strategic importance of new production, but exemplifies on the other that qualitative improvement by integral stock management is the only viable way to improve the condition of the existing stock and - with the exception of very bad substandard and/or unwanted obsolete stock - a generally better choice than replacement by new construction (Thomsen 2009).

A second effect of the declined new production is the steadily ageing of the existing stock. Though still relative young, in particular the older part of the stock is increasingly facing deficiencies and shortcomings. Reliable comparative data about the volume of the qualitative backlog are scarce, but the available data show an ongoing need for reinvestment, in particular in energy efficiency (Itard and Meijer 2010). In the rented sector, large parts do not satisfy residents needs and preferences and many post-war neighbourhoods are in trouble (van Kempen et al. 2006). The quality development of in particular the older owner-occupied sector needs growing attention and the energy efficient is still far from the Kyoto goals. On the longer term, in a few decades many parts of Western Europe will face a declining population, which in combination with an aged population and aged housing stock will have wide spread economical, social and environmental effects.

Although the addition of new construction is often reasoned as to improve the availability and suitability of the stock by offering residents a free choice, this is only valid in an open demand driven market with sufficient supply. Even if effective in some markets, an annual production of 1% of the stock or less largely limits this inefficient way of stock management. In general, redistribution by interference on the housing market, either direct by letting regulations or more sophisticated area directed instruments, may be a better and on the longer term more effective and efficient solution.

3.2. Building and construction sector

The shift from new construction to accommodation of the existing stock has indispensable - and eventually structural - consequences for the building and construction trade, two main causes being the character of the work and the commissioning.

As mentioned above, the total turn-over of major repairs, renovation, adaptation and redevelopment in most Western-European countries counts at present for well beyond that of new construction, causing an essential shift in the building construction practice. Compared with large scale new construction, working in often occupied existing dwellings requires completely different and difficult skills regarding technical, social and managerial craftsmanship, as well as the type, size and organization of the company. Typical renovation, maintenance and repair contractors are generally small to medium sized companies with flexible work units, increasingly staffed with independent shop keeping craftsmen. Large new construction companies are not suited for this kind of business, though some of them have started a specialized subdivision for large scale maintenance and renovation projects. On the side of designers, developers commissioners and government, the situation may even be worse as, with the exception of an increasing number of specialists, the knowledge about how and when to successfully maintain, manage, adapt, transform and redesign older stock has still a way to go. Also, though the building construction sector as a whole acknowledges the need for a change, in practice many large scale new construction contractors try to maintain a conservative business-as-usual course, if not in greenfields then in brownfields. Together with a large share of housing associations and real estate developers they up to now propagated new construction as being better, cheaper, easier and less risky than renovation and pushed large scale brown-field redevelopment by acquisitions. Mainly as a result of this, the Netherlands saw a considerable increase of demolitions (van der Flier and Thomsen 2006). Similar advances are visible in e.g. Austria, Ireland, Germany, The UK and Switzerland.

While most new housing construction is commissioned by developers, construction work in the existing stock is largely a consumer market, commissioned by either owner-occupiers or with decisive tenant involvement. The building production is in fact more and more divided in two different segments: on the hand large professionally commissioned and managed projects of mainly new construction, and on the other hand small privately commissioned, hardly professionally managed works of mainly repair and renovation. While roughly covering an equal total turnover, the first covers less than 20% and the latter over 80% of formal building permit applications (Dutch data), (Van der Heijden 2009).

In particular in the owner-occupied stock, most work consists of small to moderate maintenance and refurbishment jobs, often without assistance of an architect and partly without a building permit. A substantial share of the turnover involved takes place in the informal market of moonlighters and semi-DIY. The same happens to some extent in countries where tenants have refurbishment rights like in the Netherlands, the UK and Sweden and where as a result the average refurbishment investments of tenants have been estimated on over one third of that of owner-occupiers (REF). In case of substantial refurbishment and renovation by landlords, particularly with a rent increase, tenants usually have involvement and co-decision rights, entitling them to e.g. decide about the main design, finishing and furnishing.

The shift to a consumer market in particular effects the supplying industry. The building material industry - the mainstream of whose production is now directed to the replacement market² dominated by DIY and C&C markets - is increasingly converting into a multinational industry, serving a competitive end-user driven market and supported with substantial research, development and marketing budgets. As they more and more outshine the traditional building contracting trade, a growing part of the providing industry is intervening in the building market by appealing directly to the consumers with dealer networks, licensed contractors and franchise trades, including marketing, advertising, after sales services and guaranties,

provisions that as a matter of fact are regular in most other markets. A further development may be the partly or total takeover of contractors - being the assemblers of their products - by the providing industry, as in some specialized branches is already emerging.

Within the building contractors branch, some promising recent developments show the rising growing awareness of the paradigm shift. In the Netherlands a group of maintenance contractors launched a model for performance based long term maintenance contracts for residential property. This initiative not only acknowledges the physical and economical importance of long term quality care but also implies a shift in tasks and responsibilities between property managers and contractors (Straub 2009).

3.3. Governmental steering and legislation

Last but not least, the paradigm shift has consequences for governmental planning and control on different levels. In many Western-European countries, the main legal steering structure on building and planning dates from the building boom era, and is insufficiently fit for the changed circumstances. Improvement of the legislation is under pressure of a strong undercurrent of liberalisation and reduction of bureaucracy.

Traditional instruments for spatial planning are mainly restrictive, to prevent unwanted developments, while nowadays spatial problems require active steering, provoking wanted improvements. The fact e.g. that traditional zoning instruments are insufficient for the renewal of existing urban areas is meanwhile well noted, but the understanding that this more and more applies for environmental planning as a whole is not yet widespread (Hulsbergen 2010). New more effective intervention instruments are often expensive and/or - like some PPP³-constructions - on the edge to where public commitment legally and democratically may go. Renewal and revitalisation of existing areas will anyway need an area directed approach using a mix of spatial, physical, social and fiscal instruments (Thomsen and Meijer 2007). On the larger scale, urban sprawl, confined or shrinking cities and regions will need growing attention. Confined cities like The Hague have no expansion space left within their borders. To prevent uncontrolled speculative acquisitions as well as hardly less unlikeable public interventions, new legal instruments are indispensable. The same - but quite differently - applies for shrinking areas. In a few decades many parts of Western Europe will face a declining population, which in combination with an aged population and aged housing stock will have wide spread economical, social and environmental effects.

Regarding building regulations and enforcement, the above mentioned two separate segments of the building production lay a very different burden on the governmental bureaucracy. According to the Dutch situation, the one part of large, professionally managed projects, covering less than 20% of building permit applications, requires extensive and intensive expert interference, but the governmental burden can substantially be reduced by privatisation and certification (Van der Heijden 2009). The other part of private hardly professionally managed small works, covering over 80% of building permit applications, requires a totally different approach with an emphasis on facilitating and supporting safe, healthy and sustainable solutions, increasingly by means of web-based applications.

On the subject of governmental steering and legislation, but in fact on all the consequences as discussed above, the conclusion is all together that the new paradigm comes with on the one side new problems and public assignments, but on the other side declining means for public planning, steering and enforcement. This is not only true where it comes to new requirements like energy reduction and sustainable development that need new approaches (Sunikka 2006), but touches the core of the new paradigm: it requires new ways of policy development and in particular of understanding and cooperation between the parties involved.

4. Conclusions and discussion

The turn of the last century showed a drastic reduction of the production of new dwellings. Though this reduction went slowly and silently, the underlying causes and consequences are structural and urge for a paradigm shift in the way the housing stock is maintained and managed.

Up to now this development draw little political attention. Coherent overall research is up to now only scarcely available. This may be partly due by the fact that the consequences were apparently limited on the short term, but they will be crucial on the long term.

The underlying causes can be divided in demand side, supply side and contextual causes and constraints. They each apart and all together underpin the structural decline of the housing production.

The consequences are manifold and widespread. With respect to housing provision and housing stock management, new construction is no longer a solution to solve quantitative nor qualitative shortages. Instead, qualitative improvement by integral stock management is the only viable way to improve the condition of the existing stock and - with the exception of very bad substandard and/or unwanted obsolete stock - a generally better choice than replacement by new construction. With respect to housing quality, the ageing of the stock requires increasing attention and an ongoing need for reinvestment, in particular in energy efficiency.

The shift from new construction to accommodation of the existing stock has also structural consequences for the building and construction trade. Compared with large scale new construction, working in often occupied existing dwellings requires completely different and difficult skills regarding technical, social and managerial craftsmanship, as well as the type, size and organization of the company. This also applies to the side of the designers, developers commissioners and governments, who's knowledge - with the exception of an increasing number of specialists - about how and when to successfully maintain, manage, adapt, transform and redesign older stock has still a way to go.

The fact that work in the existing stock is almost entirely a consumers market drastically effects the market approach of the supplying industry and eventually the structure of the construction industry. Nevertheless many large scale new construction contractors and developers maintain a conservative business-as-usual course by propagating new construction as being better, cheaper, easier and less risky than renovation and refurbishment.

Regarding governmental steering and legislation in particular, the conclusion is all together that the new paradigm comes with on the one side new problems and public assignments, but on the other declining means for public planning, steering and enforcement.

For the next future, much will depend on the way how governments, property and building markets will acknowledge the need for a paradigm shift. And if they do, how the parties involved will find new ways of understanding and cooperation. After all, housing and planning policies are only partly related to the physical supply side, and finding solutions requires more than bricks and mortar. Housing is not a purpose at itself but serves a basic need that is conditional for the quality of human life. The awareness of this is not always ruling the decision making. Particularly in the building and property market, self-interest - either by clear and open price negotiations or more hidden by influencing policy, goals and conditions - is a natural mainspring that not seldom biases the outcomes. As an example, the decision making between renovation or demolition of older dwellings may serve as a touchstone regarding its crucial role in the future approach of the housing stocks. Recent Dutch research findings show that from a social and physical sustainable viewpoint, life cycle extension is preferable above demolition and replacement by new construction. Earlier findings showed a high and growing demolition rate in the Netherlands, partly attributable to profit related demolition motives of the housing associations (van der Flier and Thomsen 2006). But also other parties in the decision making and building process - including municipalities - put in their influence for self-interest⁴, with the weakest party - the residents - generally on the losing end. It will be the assignment of governments from state to local to provide checks and balances for the decision making and prevent inequitable outcomes.

Role government: neo-liberal laissez-faire, or ? 3.1.

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¹ Ireland is an exception as the longtime postwar economic stagnation followed by the catch up boom in the nineties caused a complete different development of building production and consequently of the housing stock.

² Of the total production of the international sanitary and sewerage manufacturer Geberit, over 80% is used for replacement of existing material (source: information by the Dutch branch office, 2007).

³ Public Private Partnership

⁴ In particular Dutch municipalities have strong interests in new construction, while their expenses, being the costs of the renewal of the infrastructure and the municipal commissioning will be covered in the land price, while in case of renovation there is no coverage at all. In several cases this turned out to be a decisive reason for demolition.