

# Time-based dwelling

Architects nowadays are facing a new challenge: they have to design for the unknown, the unpredictable. Form-follows-function is giving way to concepts like polyvalence, changeability, flexibility, deconstructability and semi-permanence. Design is turning into an innovative tool for developing new spatial and structural configurations which can provide freedom.

Why should we focus on the time-based dwelling? The concept of time-based comes from video art and cinematography. What the ruler means to the architect, the time-base means to the video artist. As building designers – or architects – have to deal with aspects of time, the time-base could become a new rudiment for them as well. The influence of time on the design and development of buildings is not insignificant. But why has time become so important and how can we deal with it in the design process? Well, the speed and unpredictability of the modernisation wave have seriously complicated the architectural development of buildings – in itself a slow process. It is not uncommon for programmes to change radically during the design process. Unpredictability is related to shifts in the economy and society, to changes in the spatial layout of the city, etc. A building standing on the periphery today could be the centre of a new and fast development tomorrow or vice-versa. The average number of square metres of living space per inhabitant has doubled in the past fifty years. Many people are becoming more affluent and are consuming more space, more energy, and more material. This is creating a need for new concepts of durability and density. How can we take account of uncertainty and time when we are designing such slow objects as buildings? And when we do focus on designing slow architectural objects, how can we be sure that the people who live in them will protect their cultural and material value in the future?

John Habraken, author of *De dragers en de mensen*, 1961 (English title: *Supports An alternative to Mass Housing*) argues that we should create support systems that give people the freedom to build their own houses. The support system is a task for the community, the house itself is the result of a process known as ‘dwelling’. Habraken worked out this concept in association with the Foundation for Architects’ Research (Stichting Architecten Research/SAR). Time-based dwellings is also a research theme at the Department of Real Estate & Housing at Delft University of Technology. Bernard Leupens’ dissertation: *Frame and Generic Space* (2006) elaborates on permanence and changeability in the dwelling. Leupens’ research is based on a long tradition of typological studies and studies of design analysis at TU Delft. He has inspired young researchers to explore this field further.

The School of Architecture at the Royal Danish Academy of Fine Arts in Copenhagen has its own tradition in housing research. During 1936 - 1943 Professor Kay Fisker published a critical study on housing typology (Arkitekten 1938 and 1943). This study, partly worked out with Fisker's students, concentrates on different types of density and the possibilities of typological combinations. The analysis focuses particularly on the architectural quality of the dwellings. Jørn Ørum Nielsen elaborated on the Nordic tradition of rowhouses (Om langhuse, længehuse, huse på række og rækkehuse, 1988; transl. Dwelling, 1996) and concluded that complexity, changeability and integration were keywords for civic planners of the past. Technology provided opportunities for an almost unlimited integration of functions, adaptations and rearrangements to suit different usages and purposes thanks to flexible boundaries between home and production and between home and institution. In each estate, rooms were planned with a view to new functions, institutions, or small industrial trades. During 1983-95 Peder Duelund Mortensen researched full-scale modelling of dwellings at the Laboratory of Housing. His primary aim was to analyse, question and revive the 'classical' concepts of dwelling and to redefine the quality of future housing in relation to changing life conditions. The project: Dwellings defined by situations: dwellings suitable for changing life conditions, is a current research topic at the Laboratory of Housing and is concentrating more closely on refining dwelling conditions.

In the past five years Delft University of Technology has been sharing ideas with the School of Architecture at the Royal Danish Academy of Fine Arts in Copenhagen. In this issue we present our ongoing research in this field. Various articles were submitted in response to an invitation printed in this journal. We, the guest editors, have selected five for publication. Each of these articles is based on the idea that the dwelling creates the context for daily life. Like Leupen, Welling, Duelund Mortensen, Livø and Wiell refer to a framework. Thomsen and Tjora use the word 'scene' while Loch speaks of 'a set of boundaries'. Habitation is the result of the interaction between the dwelling and the dweller, between the context and the inhabitant. Hence, the dwelling creates the preconditions for habitation but does not determine the actual nature of the habitation.

Together, the five articles paint a broad picture of the concept of the time-based dwelling. They consist of historical reviews, theoretical discussions, the development of concepts, and a study on the actual habitation of a dwelling that could be characterised as time-based.

The first article by Judith Thomsen and Aksel Tjora from Norway looks at the temporary nature of habitation. It reports the living experiences in a time-based, experimental student house, TreStykker, which was designed and then built in Trondheim, Norway, during a student workshop in the summer of 2005. The flexible solutions applied by TreStykker have made the project relevant to a reflection on 'time-based' as a premise for architectural design. In this article, the term 'time-

based' denotes a non-permanent house, where the interior space can be adapted to different needs over time by changing the arrangement of moveable elements.

Three themes pertaining to living experiences emerged from interviews and the diaries of the inhabitants: (1) the dwelling as a changing scene, examining the daily use of flexibility and changeability of the room; (2) social life as collaboration, examining issues of social life and privacy; and (3) the dwelling as an image statement, examining the meaning ascribed to the house by the inhabitants.

Though the project primarily involved temporary student accommodation and explored the limits of privacy and intimacy, it also exposed another interesting aspect: the spatial organisation of the dwelling. If we split the space in a dwelling into three categories – communal space, functional space and private space – the communal space in TreStykker was determined by the arrangement of the private space, the individual boxes. Though the residents felt that the dimensions did not match the requirements in this respect, they agreed that better dimensioning would offer excellent possibilities for time-based changeability in a more permanent dwelling.

Bernard Leupen adopts a totally different standpoint in Polyvalence, a concept for the sustainable dwelling. In this article time-based is considered from the perspective of sustainability. Dwellings that are built so that they can be inhabited in various ways with only minimal adaptations will have a long life expectancy. The keyword here is 'polyvalence'. Polyvalent space and spatial systems are suitable for different forms of habitation.

A dwelling must be able to provide space for all the different activities which it is capable of accommodating to take place at the same time. Polyvalence therefore imposes different requirements on the spatial organisation of housing than on the spatial organisation of commercial and industrial buildings. Whereas, in a hall, polyvalence can be achieved by the use of proper dimensions and ratios and by the provision of special service areas such as cloakrooms or a foyer, in housing the degree of polyvalence depends primarily on the relationships between the rooms, i.e. on the spatial composition. The spatial composition of a house can be expressed by a topological diagram. A spatial system in which different rooms can only be accessed through a central room, for example the living room, is less capable of being adapted to suit different living patterns. The contrast here is between dwellings in which the spatial system allows every room to be reached from one central point or through a number of different routes.

The author uses an analysis of different polyvalent housing projects to draw conclusions on the spatial systems that actually provide polyvalence.

In *Life Transforms, Living Transforms*, Sigrid Loch from Stuttgart takes a historical look at flexible dwellings in general and time-based dwellings in particular. She concentrates mainly on the situation in her own country, paying specific attention to recent projects. The development of flexible spaces has come a long way since

the 1960s and 1970s when people believed in one uniform and multi-functional module to fit all needs. Nowadays, sophisticated ‘profiling’ for future residents has become an essential part of planning – and not only for commercial reasons. Residential planning has discovered subjectivity. Accordingly, flexibility concepts are tailored to the subjective needs and demands of very specific user groups, ranging from urban singles or couples, and start-ups that combine living and working, to older people in potential need of care. Even if the concept of ‘custom-tailored flexibility’ does sound like a paradox, it still provides high quality.

Profiling simplifies planning as it defines the parameters. The design concept becomes more manageable – it does not have to cater to everybody’s needs at the same time – although some degree of compromise will be necessary. It is possible to develop spatial qualities in detail within set boundaries. However – and this may be the second paradox of the new trend – the flexibility concepts are so ‘robust’ that they work for other user groups as well.

The new approaches to flexibility leave behind the beginner’s mistakes of the 1960s and 1970s. Architectural expression is no longer subordinate to the structural concept. The new models embrace historical and imaginative dimensions: in the Sargfabrik project, the new spatial phenomenology even evokes narrative potential. It seems that, for the first time in modern housing history, the design of human dwellings is no longer driven by ideology, shortages, or a passing fascination with technical innovations. Maybe, this offers a new chance to turn the spotlight on the search for ‘subjective authenticity’ in housing.

Helen G. Welling, Margit Livø, Peder Duelund Mortensen and Lene Wiell have been studying dwelling situations in a project entitled Situations of Dwelling – Dwellings suiting Situations. They look at changeable dwellings which can cater for spontaneous activities and needs arising from changing family patterns, concentrating on dwellings that provide room for development and flexibility – an open framework which can be adapted to the values and needs of different situations, lifestyles and stages. The study is based on information from residents in new housing schemes in and around Copenhagen – ‘open building’ dwellings that reflect a whole array of approaches to these problems. The search is on for an architectural quality which can be maintained in tandem with greater scope for individual development and influence.

The research group emphasises that dwelling in these non-determined apartments is a challenge for users and architects alike. The question is whether the users really benefit from the freedom contained in these spaces? Observations indicate that potential exists in three conditions: the solid condition, the suitable condition, and the situational condition. The research group found different combinations of these three conditions and has developed a series of graphic illustrations to support further research. These conditions will be discussed in relation to the final phase of the research, which will focus on older types of adaptable dwellings.

Finally, in *Connecting Inside and Outside*, Birgit Jürgehake examines a specific

aspect of a dwelling: the relationship between the inside and the outside world, where the conditions are created by the facade. Jürgehake investigates the potential role of the facade in the time-based dwelling. The article is about the complexity of the sequence between the dwelling and the public space. It focuses, on one hand, on the interaction between inside and outside and, on the other, on how the zone between inside and outside serves as a buffer, creating spaces and layers between the dwelling and the world outside. Lifestyles have become far more individualised. How are recent dwelling concepts responding to the changes in lifestyle and living from the inside to the outside?

Jürgehake describes the level of the facade and its complexity as an intermediary space and a mediator between the dwelling and the public space. The facade is the face of the residence while, at the same time, it functions as a mediator between the dwelling and the city. The dwelling is primarily a place to shelter from external influences. Here, in his cocoon, man can find privacy. However, he also has a physical and psychological need of the community. He needs contact with the public. The facade is the element which allows him to regulate his contact with the world around the dwelling. Jürgehake provides a brief description of the layers in the facade that enable such regulation and which make the facade such a complex element. The search for new dwelling concepts involves the discussion of some historical and recent concepts. Does the facade – as the public face and the intermediary between inside and outside – need to be redefined?

The five articles provide an interesting and broad picture of the time-based dwelling and point to unexplored fields of research. One striking aspect is the interest that various authors display in the use of the dwelling. The development of new ideas will have to be accompanied by the testing of old and new dwelling concepts. International cooperation will assist the search for new and reliable research methods which are needed to realise this. The five articles printed here are a step in the right direction. We hope you enjoy reading them.

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