



Maciej Janowski*

Kinetic House.

Mobility in shaping the function and form of the contemporary house

Introduction

Mobility of both parts and the whole of the house is not its dominant feature, but the modern formal and, above all, functional solutions achieved thanks to it are so interesting that an attempt should be made to analyze them on the basis of selected representative projects. This is all the more important because the variability of the house architecture is determined by the variability of behaviours, lifestyles, and psychophysical, social and functional needs of modern man. This relative new feature of the home can be seen as best expressing the spirit of the fluid modern age, just as the immutability associated with durability met the needs of occupants in previous eras. The aim of this article is to identify and analyze such architectural solutions that arose as a response to the needs of the contemporary inhabitant/inhabitants, arranged in accordance with Abraham Maslow's theory: first, basic needs (security safety), then psychological (belongingness, intimate relationships) and at the end, self-fulfilment involving all kinds of creative activities. Mobility in the architecture of the house is the factor that allows us to complete and extend the fulfilment of these needs, as in the case of historical architecture, but using the contemporary architectural language derived from the modernist movement. As the subject of the research selected houses were taken which were built in 1996–2011 in Europe and the USA.

Theo van Doesburg dealt with the mobility of architectural elements shaping a new type of space in his manifesto *Towards Plastic Architecture* [1]. László Moholy-Nagy and Szymon Syrkus wrote about movement as a new matter of architecture in *The new vision and ab-*

stract of an artist [2], and *Preliminarz architektury* [Estimate of Architecture] and *Tempo architektury* [Pace of Architecture] [3], [4]. In turn, Alvar Aalto, like Syrkus, saw the potential of using *mobile and universal furniture* in residential interiors [5]. The topic of home mobility was also raised by Buckminster Fuller, Frank Lloyd Wright, Alison and Peter Smithson. Interesting, but little known, is Yona Friedman's text *Mobile Architecture Manifesto*, in which he argues that mobility based on flexibility enables both *the freedom of choice for the individual* and *the flexible use of city space* [6].

Nowadays, Russel Fortmeyer and Charles D. Linn, who deal with kinetic architecture, focus on kinetic problems of façades, with particular emphasis on public buildings, but referring to selected aspects of private house architecture [7]. The typology of movable architectural elements divided into categories of movement (including swivel, slide, fold and expand), supported by examples, was presented by Michael Schumacher, Oliver Schaeffer and Michael-Marcus Vogt in *Move. Architecture in Motion* [8]. On the other hand, Robert Kronenburg, in his subsequent publications, discusses various aspects and forms of mobility in historical and contemporary architecture: from nomadic architecture, through military engineering, to prototypes and realizations of mobile houses [9]–[11].

The source texts and publications quoted here on the kinetic architecture of a private house show that its development is incremental and includes more and more important elements of the building. In the Steiner House and Tzara House by Adolf Loos, a system of curtains divides rooms into smaller units to suit the inhabitants' needs. Designing the house for Truus Schröder-Schröder, architect Gerrit Rietveld addressed the changeability of space by carrying out Theo van Doesburg's postulates of openness and mobility. Moving walls make it possible to transform the living room into four smaller rooms; this is

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Fig. 1. Ludwig Mies van der Rohe, the villa of Greta and Fritz Tugendhat, Brno, Czechoslovakia, 1928–1930.
The use of mobile glazings introduces openness and large-scale mobility (photo by M. Janowski)

Il. 1. Ludwig Mies van der Rohe, dom Grety i Fritza Tugendhatów, Brno, Czechosłowacja, 1928–1930.
Użycie ruchomych przeszkleń wprowadza do domu czynniki otwartości i mobilności w dużej skali (fot. M. Janowski)

coordinated with the outdoor space change, where similar openness exists and the movement of the planes in relation to one another and to the centre remains the same. In the Tugendhat Villa designed by Ludwig Mies van der Rohe, panoramic glass windows of the living room blur the traditional division between indoor and outdoor space¹ (Fig. 1).

In the following decades, such large-scale and technically advanced mobile components were not used; Architects such as Alberto Rosselli and Isao Hosoe (Mobile House, 1971–1972) or Eduard Böhntlingk (Markies, 1986–1995) experimented with extending the space of small houses by means of folding terraces and sliding folding partitions, combining it with the mobility of the houses themselves. The introduction of architectural elements that significantly change the function, form and relations between the interior and exterior that define a kinetic house, appeared only in projects and implementations by, inter alia Glenn Murcutt (Marika-Alderton House, Eastern Arnhem Land, 1991–1994), Bernard Tschumi (Hague Villa, 1992) and Shigeru Ban (Curtain Wall House, Tokyo, 1995). Attempts to introduce mobility as one of the factors expanding the relationship between the human need for constant change and the built environment have been and are still being made from different points of view.

In a private house, such changeability and mobility are the consequence of widening of the notion of indi-

vidual functionality, understood as adaptation to natural conditions (regulating the inflow of natural light, contact with the environment) but predominantly to the changing needs of the dwellers, both physical (communication, re-interpretation of function, the need for isolation or openness) and aesthetic. Mobility is also the manifestation of interdependency between a given person's individuality and the space that the person occupies. Modern man in the process of personal development diversifies his personality, which requires complex forms and spaces. The mobility of architectural components makes it possible to directly influence the form of the house, which increases identification with the occupied space.

Mobility of architectural element(s)

Complicated relations between the man and the house, shaped by changeability and mobility of forms, were made even more complex at the house of the Lemoine family in Bordeaux designed by Rem Koolhaas, predominantly with the disabled house owner in mind. The complexity stems from the house structure and the manner of organization of indoor and outdoor space to suit the needs of the wheelchair-using owner². The heart of the house is the centrally situated mobile platform (3 × 3.5 m) that, by moving, keeps altering the form of the house (Fig. 2). The house consists of three “layers”, stacked one on another, connected with a three-storey bookshelf with books, documents and artworks available for the house owner thanks to the mobile platform. By setting the platform in motion,

¹ A separate topic is the mobility of the whole home, which in the context of recent events (the 2008 crisis and the Covid-19 pandemic) requires in-depth research and projects. The issue was taken up by Buckminster Fuller in his design of the Wichita House (Kansas, 1946), a dwelling unit that could be moved and assembled anywhere. Its “aerodynamic” form was an inspiration for the Six-Shell-Bubble by Jean Benjamin Maneval (1963–1964), Futuro House by Matti Suuronen (1968), Rondo by Carlo Casoni (1970) and experimental housing unit by Luigi Colani (1970).

² Koolhaas' client described his expectations in the following manner: *Contrary to what you would expect. I want a complex house because the house will define my world* (after: [12, p. 164]).

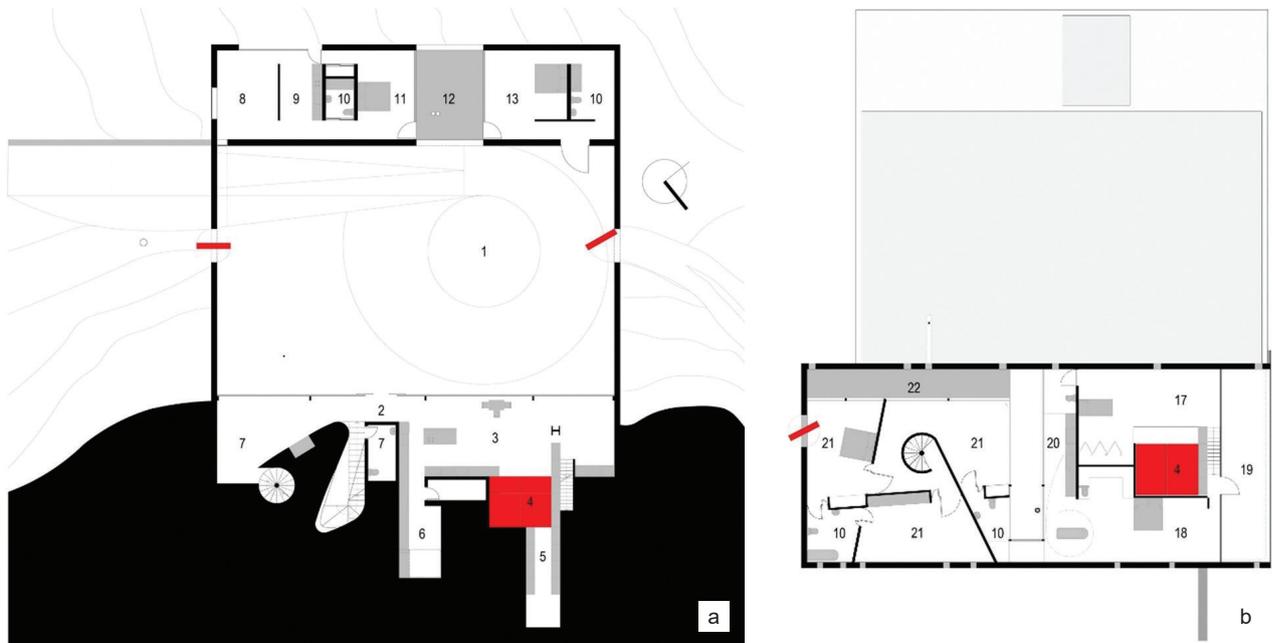


Fig. 2. OMA, Rem Koolhaas, Maison Bordeaux, France, 1996–1998.

Layout of the ground floor (a) and the first floor (b):

- 1 – courtyard with driveway, 2 – hall, 3 – kitchen and dining room, 4 – mobile platform, 5 – wine store,
 6 – technical room, 7 – common room, 8 – therapist’s room, 9 – kitchen, 10 – bathroom, 11 – bedroom,
 12 – patio, 13 – guestroom, 14 – living room, 15 – terrace, 16 – workspace,
 17 – bedroom of a disabled owner, 18 – bedroom of the owner’s wife, 19 – loggia,
 20 – parents’ bathroom, 21 – children’s bedroom, 22 – patio

(drawings by M. Janowski based on [13]–[15])

II. 2. OMA, Rem Koolhaas, dom pod Bordeaux, Francja, 1996–1998.

Rzut przyziemia (a) i pierwszego piętra (b):

- 1 – dziedziniec z podjazdem, 2 – hol, 3 – kuchnia z jadalnią, 4 – ruchoma platforma, 5 – skład wina,
 6 – pomieszczenie techniczne, 7 – pokój wspólny, 8 – pokój terapeuty, 9 – kuchnia, 10 – łazienka, 11 – sypialnia,
 12 – patio, 13 – pokój gościnny, 14 – pokój dzienny, 15 – taras, 16 – miejsce do pracy,
 17 – sypialnia niepełnosprawnego właściciela, 18 – sypialnia żony właściciela, 19 – loggia,
 20 – łazienka rodziców, 21 – sypialnia dzieci, 22 – patio

(rys. M. Janowski na podstawie [13]–[15])



Fig. 3. Maison Bordeaux.

The platform – *the heart of the house* (Koolhaas’ expression)
 arranged as the owner’s work space (a) and leisure area (b)
 (photo by H. Werlemann, © OMA)

II. 3. Dom pod Bordeaux.

Platforma – *serce domu* (określenie Koolhaasa)

zaaranżowana jako miejsce pracy właściciela (a) i jako strefa wypoczynku (b)
 (fot. H. Werlemann, © OMA)

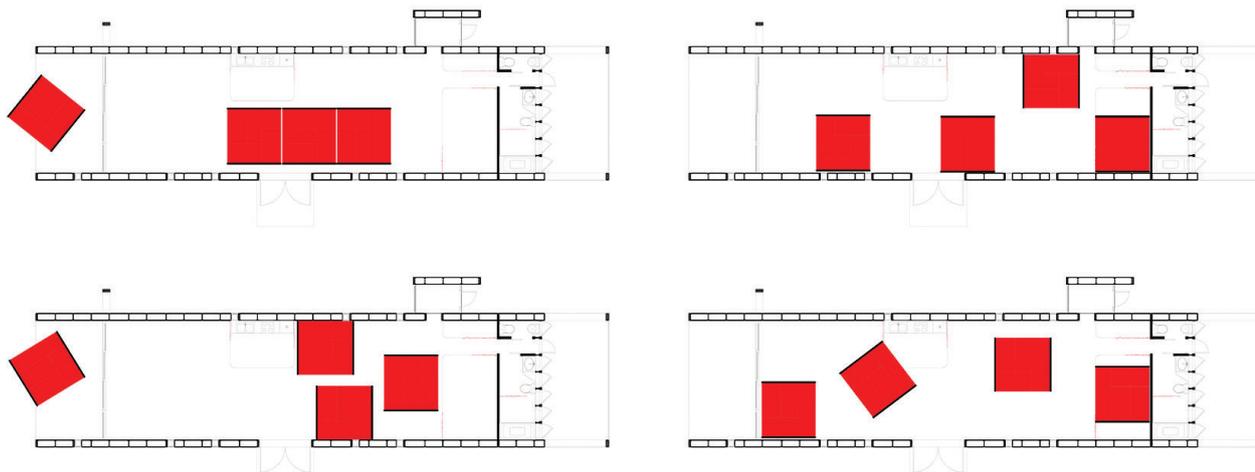


Fig. 4. Shigeru Ban, Naked House, Saitama, Japan, 1999–2000. Variants of arrangement of mobile boxes (drawing by M. Janowski based on [18]–[20])

Il. 4. Shigeru Ban, Naked House, Saitama, Japonia, 1999–2000. Warianty ustawienia mobilnych boksów (rys. M. Janowski na podstawie [18]–[20])

the owner can transform it into office space or leisure space (Fig. 3), move to the area where all the inhabitants can be together or separate himself from others³.

While moving up and down the platform, the owner is able to experience various forms used by Koolhaas and the changing landscape. He moves through the semi-open courtyard to the “cave-like” rooms of the ground floor, passes the living room open to the surrounding countryside to reach the contemplative spaces of the uppermost level. Visual tensions experienced during such a journey offer the abundance of impressions so important for a man whose physical mobility has been severely limited.

The design priorities adapted by Koolhaas exceed conventional solutions applied in residential realizations because [...] *the house and body are intimately linked. The house is an extension of the person; like an extra skin, carapace or second set of clothes, it serves as much to reveal and display as it does to hide and protect. House, body and mind are in continuous interaction* [17, p. 2]. In the light of this statement, Maison Bordeaux may be treated as a kind of architectural prosthetic device.

The platform is installed in such a way that its vertical movement considerably alters spatial relations within the house, although the scope and number of combinations of those changes is limited. In the case of Naked House designed by Shigeru Ban, the mobility of inner forms serves the purpose of creating countless combinations. Naked House is a cube covered with a curved roof and with small cubicles-rooms moving inside. The family members may change the interior of the house by moving their bedrooms or putting them one next to another. Each of the inhabitants must “configure” his personal space with taking into account the needs of other family members (Fig. 4). Thus,

³ M. Emery remarked on the similarity of the solution applied by Koolhaas with the J. Bata’s office room situated in the lift in his office building in Zlin [16].

the indoor area is shaped according to individual needs of the dwellers and results from their mutual dialogue. The space inside the Naked House is the joint creation of all those who inhabit it. Its interior assumes various features as a result of personal (and negotiable) choices and various activities carried out by the inhabitants, who make decisions about its internal structure. This is how Shigeru Ban described that situation: [...] *what he wanted was described as a house that “provides the least privacy so that the family members are not secluded from one another, a house that gives everyone the freedom to have individual activities in a shared atmosphere, in the middle of a unified family”*. [...] *This house is, indeed, a result of my vision of enjoyable and flexible living, which evolved from the client’s own vision toward a living and a family life* [18].

The traditional complex structure of a house with fixed features has been replaced with a simple structure allowing constant reconfiguration of spatial and community relations. In that sense the Naked House is an open work of art whose nature is constantly being defined by its inhabitants⁴.

Gabriela Seifert and Götz Stöckmann approach the question of mobility from a different angle. In their design called the Living Room House, the movement of an architectural element is a manifestation of creativity of inhabitants themselves, situated in a strictly defined historical context. The form of the house reproduces the cubage and geometry of the 16th century Zitronenhaus and so do the sizes and proportions of windows regularly spaced on the uniform surfaces of the façade and roof. The interior, treated as open space, is defined by two elements: the

⁴ Inspirations with the idea of space shaped with movable modules (boxes) can be seen in a non-executed design of the Tic-Tac House by Forte, Gimenes & Marcondes Ferraz Arquitectos. They designed a house in which the only fixed element is its middle part situated on a rectangular platform with the kitchen and bathroom. The remaining four rooms, treated as independent mobile units, may be moved and turned, creating any desired configurations of solids and spaces [21].



Fig. 5. G. Seifert + G. Stöckmann, Living Room House, Gelnhausen, Germany, 2004.

Despite the use of modern cladding materials and façade composition, the house blends well with its surroundings; it is only when the “drawer” is open that the house acquires a new meaning and its form is literally destabilized:

- a) view of the house with the “drawer” closed (photo by M. Janowski),
 b) north elevation with a quote from the poem *Das haus ist der mundraum* by Thomas Kling (photo by M. Janowski)

Il. 5. G. Seifert + G. Stöckmann, Living Room House, Gelnhausen, Niemcy, 2004.

Mimo zastosowania współczesnej kompozycji elewacji i materiałów dom wpisuje się w kontekst miejsca; dopiero wysunięcie „szuflady” nadaje mu nowe znaczenie i dosłownie destabilizuje jego formę;

- a) widok domu z wsuniętą „szufladą” (fot. M. Janowski),
 b) elewacja północna, na której umieszczono cytaty z wiersza *Das haus ist der mundraum* Thomasa Klinga (fot. M. Janowski)

limestone slab on the ground floor and the cuboid suspended at the third level (the so-called “Bridge”) containing the owners’ bedroom marked with the quotation from *Finnegans Wake* by James Joyce: *they lived und loved ant laughed end left*⁵. The work space, the extension of the bedroom, can be moved out as a drawer from the body of the house transposing the inhabitants from the private into the public (Fig. 5), from indoors to outdoors, forming a balcony suspended over the pavement and part of the road⁶. Seifert and Stöckmann defined it in the following way: *From the Living Room [house] situated in the mediæval Gelnhausen we can cross boundaries. The façade*

⁵ This is not the only reference to a literary work in the Living Room House: the inscription around the house is a quotation from the picaresque novel by Johann Jakob Grimmshausen, *Simplicius Simplicissimus*, and written on the façades are the excerpts from Thomas Kling’s poem *The house is the mouth of cave*. As a result, *the house is the text of its inhabitants*. Source: [22] and [23].

⁶ The local construction law does not allow for any part of the building to protrude over the right-of-way, but the construction authorities in Gelnhausen agreed to the deviation from the law due to non-permanent nature of the solution and treating the house as a potential tourist attraction.

becomes a membrane for urban osmosis, suggesting private and public equity. The insiders merge with Gelnhausen and the outsiders engage with living room [House]. The sandstone now suggests an otherworld at the Kuhgasse, an architectural/urban hybrid: the domestic public. And, when the drawer floor pokes out — living room [House] promulgates: “the house is the mouth cave...” [24].

The form of the house is fundamentally changed, its static shape turns out to be unstable. The protruding element (measuring almost 3 m) emphasizes the asymmetry of the façade and destabilizes the conventional silhouette of the house, thus changing its image and meaning in a surreal way. The mobile form is more reminiscent of a piece of furniture, a dollhouse, or a toy.

The essence of this house is the temporary change of the place occupied by the dwellers treated not as a necessity, as was in Maison Bordeaux, but as artistic activity, a kind of performance that supplements the architectural form (Fig. 6). The introduction of a moving study room enables moving the place of work from the bedroom to the street. The sound system designed by Achim Wollscheid filters the processed outdoor sounds to the inside. The boundaries

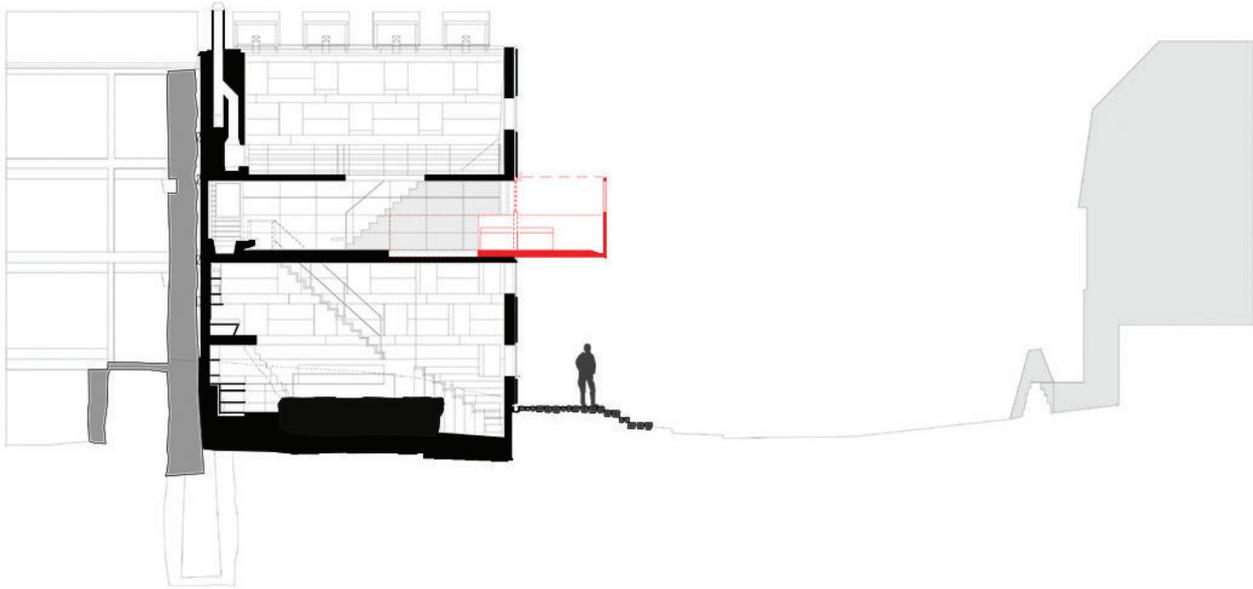


Fig. 6. Longitudinal section of the Living Room House with an extended "drawer" suspended at a height of over 3 m (drawing by M. Janowski based on [25]–[27] and own measurements)

Il. 6. Przekrój podłużny Living Room House z wysuniętą „szufladą” zawieszoną na wysokości ponad 3 m (rys. M. Janowski na podstawie [25]–[27] i pomiarów własnych)

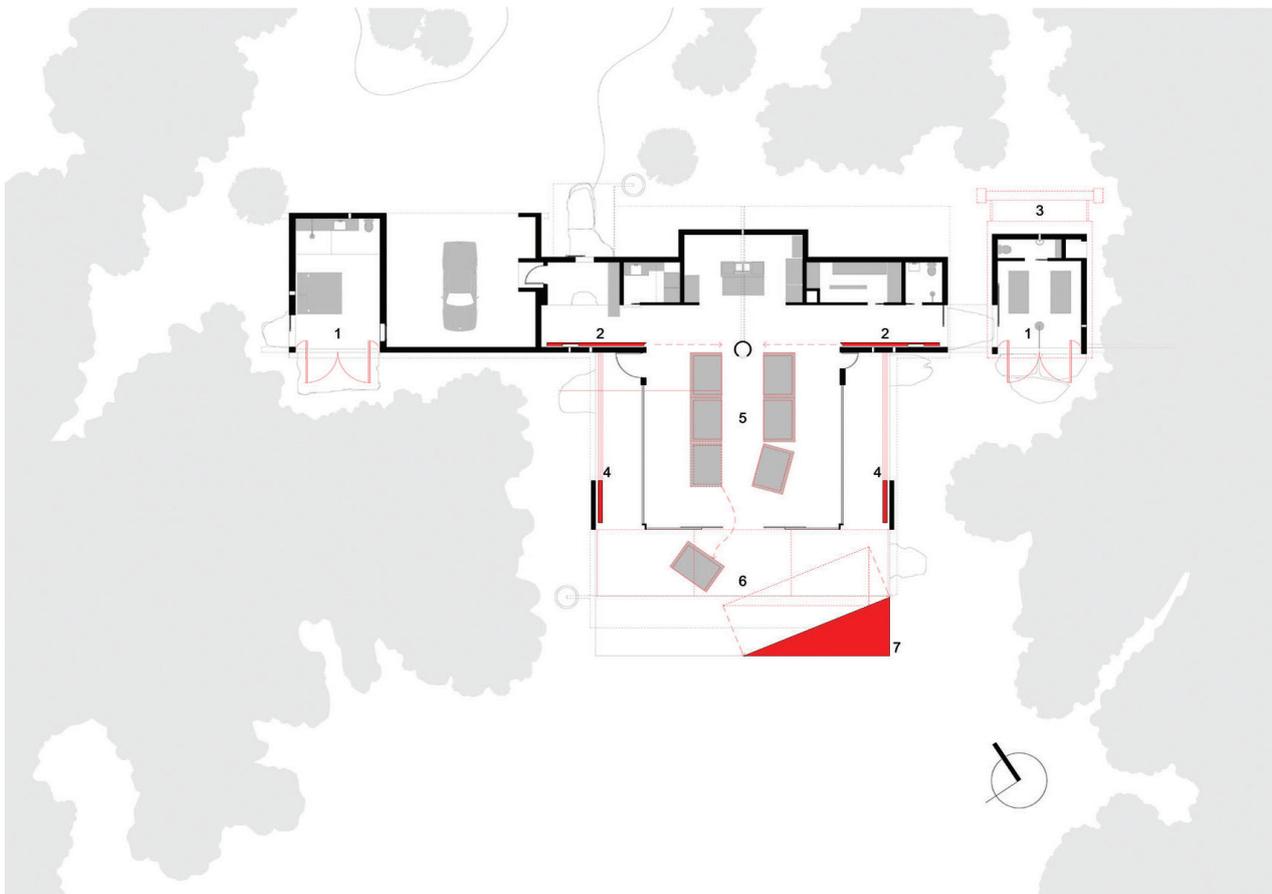


Fig. 7. Tom Kundig, Shadowboxx, San Juan Islands, 2009. Shifting doors and shutters, mobile terraces and platforms and a tilting roof constantly change the relations between inside and outside: 1 – rotating glazing doors, 2 – sliding steel doors, 3 – tilting roof of the bathhouse, 4 – sliding shutters, 5 – mobile platforms serving as sofas or beds, 6, 7 – movable terrace corner (drawing by M. Janowski based on [28])

Il. 7. Tom Kundig, Shadowboxx, San Juan Islands, 2009. Przesuwne drzwi i okiennice, mobilne podesty tarasowe i platformy oraz uchylny dach nieustannie zmieniają relacje między wnętrzem a zewnątrz: 1 – obrotowe przeszklenia, 2 – przesuwne stalowe drzwi, 3 – uchylny dach łazieni, 4 – przesuwne okiennice, 5 – mobilne podesty służące jako sofy lub łóżka, 6, 7 – ruchomy narożnik tarasu (rys. M. Janowski na podstawie [28])



Fig. 8. dRMM de Rijke Marsh
Morgan Architects, Sliding
House, Suffolk, UK, 2009.

Consecutive phases of
movement of the mobile
component. Not only the form
of particular sections of
the house is changed,
but also spatial relations.

The Orangery partially loses
its open character obscured by
the sliding element (a, b) and
the hidden courtyard opens onto
the garden (c, d)
(source: photos by
© Alex de Rijke)

Il. 8. dRMM de Rijke Marsh
Morgan Architects, Sliding
House, Suffolk, UK, 2009.
Kolejne fazy przesuwania się
mobilnego elementu.
Zmianie ulega nie tylko forma
poszczególnych części domu,
ale również relacje przestrzenne.
Oranżeria częściowo traci swój
otwarty charakter przesłaniania
przez przesuwany element (a, b),
a ukryty dziedziniec
otwiera się na ogród (c, d)
(źródło: © Alex de Rijke)

of the house continue to exist – the high walls of the movable box protect the working inhabitants from the glances of passers-by and the processed street noise reaches them with moderate intensity. Both types of extra components of the house form may, but do not have to, be revealed.

The approach to house elements mobility represented by Seifert and Stöckmann resembles Tom Kuldung's predilection for *gizmos* – devices and mechanisms that set certain architectural elements in motion. Due to the

spots in which they are situated and their careful finish, they introduce some extraordinariness, or even grotesque, regardless of their scale. A truck engine suspended from the ceiling is used to change the position of lamps in The Brain – the house and studio of David Wild (Seattle, 1998–2001). Another example of such an element is a pivoting glazed wall in the Chicken Point Cabin operated with a rack-and-pinion mechanism resembling 19th century factory equipment [28], [29]. The similar principle is

used for sliding façade panels in Delta Shelter (Mazama, Washington, 1998–2005) and Sol Duc Cabin (Olimpic Peninsula, Washington, 2011); the latter was designed according to the client's request as *virtually indestructible* and offering the option of opening the house into the surrounding forest and river valley. *Gizmos* in the Shadowboxx on San Juan Island include a tilting roof over the bathhouse, moving shutters on the side walls of the terrace that can be enlarged with mobile platforms and awnings protecting the house against gusty winds from the ocean. Those elements are constantly changing the form of the Shadowboxx and its relations with the outdoor space, especially in the living room called the cloud room *due to the changing atmosphere*. The changeability of the house is even bigger with six mobile platforms that can serve as beds, sofas or terrace furniture, thus enabling the change of function of a given room (Fig. 7)⁷.

The moving house

In houses designed by Kunding, the scale of mobile elements is small, yet the movement is revealed in a spectacular manner. Sliding of a two-storey steel panel far outside the footprint of Sol Duc Cabin radically changes the indoor-outdoor relations and also destabilizes the house body in an “anti-gravitational” manner. The situation is different in the Sliding House designed by dRMM Architects (Fig. 8).

That house [...] *enables radical spatial change, regulated degree of shelter, isolation from sunlight and opening to views. This is the contradiction of static architecture. The dynamic change is a physical phenomenon that is hard to describe with words and images. It is about the ability to alter the building's character, sunlight and openness according to season, weather or a remote-controlled desire to delight* [30].

The Sliding House has just a single moving element, but the one that has an impact on the entire building. Stretched along the southern boundary of the plot, the complex of three buildings consists of the owners' house, a guesthouse and a garage retracted from the axis of the first two structures in order to form a small yard. The buildings are united by the fourth element, a canopy roof slidably mounted on tracks and operated with hidden electric motors. The roof can “travel” back and forth along the main axis of the structure and that movement changes it in a distinct way. When the roof canopy is fully extended the house “doubles”. One can see both the arrangement of the house parts and its “negative” – an external cover or shelter that has no interior but is still strongly identified with the archetype. The inhabitants may decide on the location of the tunnel taking into consideration both natural aspects (weather, season, time of day) and aesthetic ones. In the Sliding House the house form is broken and mobil-

ity introduced to enable negotiable use of the house, just like in the Naked House by Shigeru Ban. Those phenomena complement one another, which leads to considerable changes in the manner the inhabitants perceive the space and form of their dwelling place, which translates into the degree of identification with the place that they co-create.

Conclusions

The modernist concept of time-space served as the theoretical background for the introduction of movement into architecture and vastly contributed to important changes in function and indoor-outdoor relations. The mobility of house elements is based either on conventional forms, as in the Living Room House and the Sliding House, or on forms stemming from the modernist aesthetics (Maison Bordeaux and the Sol Duc Cabin). The mobility of external walls is the manifestation of the modernist idea of permeating indoor and outdoor spheres and arranging walls in layers. In houses such as the Delta Shelter or the Shadowboxx the two spheres mingle smoothly according to the inhabitants' needs and the Living Room House offers an extra assemblage of architecture, art and literature.

The mobility of architectural elements considerably alters the way in which an architectural form is experienced, changes its dynamics and articulation. In houses designed by Tom Kundig the body of the building is extended and wall surfaces slide to reveal the interior. In the Sliding House, the entire building is changing; the design of the never-erected Tic-Tac House is based on the same principle. The loosening of the spatial and functional structure that can be observed in those two houses and the crucial role of *in between* space combined with the mobility of certain elements point to the merging of phenomena present in contemporary residential architecture.

A private house offers a lot of opportunities to introduce changes to its form and living spaces; the type, scale, timing and speed of such changes depend on the lifestyle and life pace of the house dwellers. Spatial diversity and mobility controlled by the inhabitants may compensate lack of changes or ability to control changes in other spheres of human activity. It is also a vital factor conducive to creating the living space by the inhabitants themselves. In a conventional house, the intentional activity of its dwellers leads to changes that are prolonged in time and which increase the degree of personalization, thus strengthening identification with one's living quarters. With the increased mobility of house elements the level of identification is higher, as personalization of the form and space is greater. Experiencing changes of form and space becomes more intense. As Forte, Gimenes and Marcondes Ferraz aptly remarked: [...] *nobody acts the same way in the morning, afternoon or evening. No one even reacts the same way to different seasons... so why should our houses be always the same?* [31].

⁷ A separate issue is the hapticity of the Shadowboxx. The entire house is made of tactile materials: floors of levelled earth, repurposed oak floor panels, unpainted plaster boards and steel walls, corrugated sheet and repurposed scaffolding wood.

Acknowledgements

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Abstract

Kinetic House. Mobility in shaping the function and form of the contemporary house

The aim of the article is an analysis of private houses, which, thanks to the mobility of their elements, meet the needs of modern residents. The subject of the research are selected houses built in 1996–2011 in Europe and the USA, supplemented with analyses of the phenomenon of mobility in the works of, among others, Gerrit Rietveld and Ludwig Mies van der Rohe. The article analyzes the changes in form and function as a result of introducing mobile elements into the home, adapted to the psychophysical needs of their owners. Mobility in home architecture is a factor that allows us to complete and extend the fulfilment of these needs using the contemporary architectural language derived from the Modern Movement. Analytical and comparative methods were used during the research.

The research shows that the development of the kinetic house includes more and more important elements of the building, which significantly changes the perception of the form, as well as its dynamics and articulation. In kinetic houses, the loosening of the functional and spatial structure as well as the use of in between space is visible, which, combined with the mobility of elements, proves the summation of phenomena occurring in the contemporary architecture.

A kinetic house creates great opportunities for changes in the form and living spaces, the type, scale, and time of which depend on the lifestyles of residents. Spatial diversity supplemented with mobility may compensate for the lack of changes or the impossibility of their control in other spheres of human life activity. It is also a factor conducive to the creation of a Place by the residents. As the mobility of the elements of the house increases, the level of personalization of the form and space as well as the identification of residents with the Place increases. Experiencing changes in form and space becomes more intense.

Key words: kinetic house, mobility, identity, place

Streszczenie

Dom kinetyczny. Mobilność w kształtowaniu funkcji i formy współczesnego domu

W artykule przedstawiono analizę domów prywatnych, które dzięki mobilności ich elementów odpowiadają potrzebom współczesnych mieszkańców. Przedmiotem badań są wybrane domy zrealizowane w latach 1996–2011 w Europie i Stanach Zjednoczonych, uzupełnione analizami zjawiska mobilności w twórczości, między innymi Gerrita Rietvelda i Ludwiga Miesa van der Rohe. W artykule dokonano analizy zmian, jakim podlegają forma i funkcja w wyniku wprowadzenia do domu ruchomych elementów, które dostosowano do psychofizycznych potrzeb ich właścicieli. Mobilność w architekturze domu jest czynnikiem, który pozwala dopełnić i rozszerzyć spełnianie tych potrzeb przy użyciu współczesnego języka architektonicznego wywiedzionego z ruchu modernistycznego. Podczas badań stosowano metody analityczne i porównawcze.

Z przeprowadzonych badań wynika, że rozwój domu kinetycznego obejmuje coraz bardziej istotne elementy budynku, co zmienia w znaczący sposób odbiór formy oraz jej dynamikę i artykulację. W domach kinetycznych jest widoczne rozluźnienie struktury funkcjonalnej i przestrzennej oraz użycie przestrzeni *in between*, co w połączeniu z mobilnością elementów świadczy o sumowaniu się zjawisk występujących we współczesnej architekturze. Dom kinetyczny stwarza duże możliwości zmian formy i przestrzeni, których rodzaj, skala i czas są uzależnione od stylu życia mieszkańców. Różnorodność przestrzenna uzupełniona mobilnością może kompensować brak zmian lub niemożliwość ich kontroli w innych sferach aktywności życiowej człowieka. Jest też czynnikiem sprzyjającym tworzeniu Miejsca przez zamieszkujących je ludzi. Wraz ze wzrostem mobilności elementów domu podwyższa się poziom personalizacji formy i przestrzeni oraz identyfikacji mieszkańców z miejscem. Doświadczanie zmian formy i przestrzeni staje się bardziej intensywne.

Słowa kluczowe: dom kinetyczny, mobilność, tożsamość, miejsce