

Markies, Almere, Netherlands

Date: **1986-95**
 Client: **Böhlingk
 Architectenbureau**
 Architect: **Eduard Böhlingk**
 Contractor: **Superstructure: van den
 Born, Carrosserie b.v.,
 Waalwijk; Awnings
 construction: Mado
 Nederland b.v.,
 Eindhoven; Furnishings:
 meubelmakerij Lomans,
 Rotterdam; Metalwork
 installation: **technisch
 buro Dreissen,
 Rotterdam.****

Cost: **45,000 Euros**

Eduard Böhlingk practises architecture from a small studio adjacent to his house, set in a quiet canal side-street in the village of Maasland, near Rotterdam in the Netherlands. The house has been converted to its hybrid use in a quiet and sensitive manner – there are few signs that this is anything other than a typical semi-urban Dutch home. Böhlingk remarks that his architect friends with offices in the big cities of Europe make fun of him for living and working where he does. He makes no comment – there is no need to because when one understands his design ambitions, and the process he employs to address them, it becomes clear. Just as living and working in a village is not the usual base for the creation of architecture, Böhlingk's approach to design is not usual either. He compares his creative stance to that of an inventor – he first likes to discover a strong idea and then realise it through persistent, dedicated detail design in direct response to the function it must satisfy. This approach may sound like the dominant focus is on the pragmatic, but it is not. The 'strong idea' is an inspirational creative act that provides each project with its uniquely inspired identity. Böhlingk's architecture is well-mannered, and at first glance it may also appear to be conventional. However, in all his work, but particularly his work concerned with mobility, he questions fundamental attitudes to the typical design and building strategies utilised in the developed world.

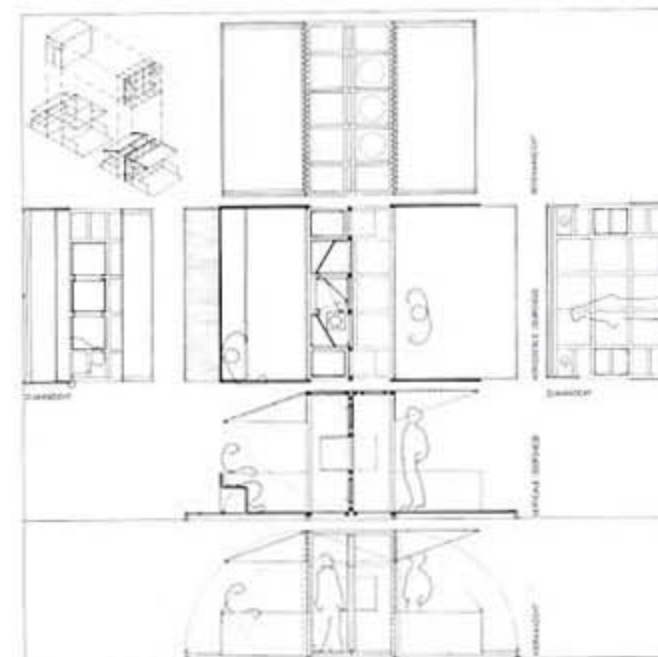


Fig. 11.1 Young Architects Biennial Exhibition: design drawing.

The work of Böhlingk Architectenbureau is divided into two discrete areas: fixed work and mobile work. The fixed work is diverse in building type – housing, education, industry, public buildings. The mobile work is equally diverse and includes an exhibition, a dwelling, a landscape feature, and a housing design system. All these mobile projects have emerged in response to architectural design competitions. It is probable that a major factor in Böhlingk's success at winning competitions for mobile structures is in the manner in which he addresses the problem – by the development of a strong conceptual approach that is then explored through dedicated detailed design work. This approach is also recognisable in his fixed work, though because other considerations such as sensitivity to existing site conditions or urban form take precedence, the buildings do not shout their innovation in flashy façades but whisper it in visual clues and ingenious planning.

Eduard Böhlingk studied architecture at the Technical University of Delft, and amongst his professors was Tjeerd Dijkstra who later became the Chief Architect for the Netherlands Government. In 1982 Böhlingk's newly formed independent

practice was commissioned by Dijkstra to build a new office building in Oud-Beijerland. He conceived a completely flexible façade that could be altered by unclicking aluminium frames from a sub-system – a flexibility which has been used in the intervening years to make changes in the way the building is used. His practice has since completed many buildings in the Netherlands – in fact, it is this 'fixed' work that has supported the continuous experimentation with 'mobile' design, even funding the construction of his most significant project, the 'Markies'.

Böhlingk's first mobile project was completed in 1985. It is a direct development of his belief that furniture design may be interpreted and designed as small-scale constructed architecture. Ten practices were selected to each create a mobile exhibition for the Young Dutch Architects Biennial to be held initially in the Beurs van Berlage in Amsterdam. Each team was invited to design a mobile exhibition structure in which to display their work. Several of today's major practices took part including Mecanoo and Raoul Bunschoten. Böhlingk conceived his exhibit as a protective, light-weight, steel framed plywood container



Fig. 11.2 Young Architects Biennial Exhibition on site in the Beurs van Berlage, Amsterdam. (Photography by Ger van der Vlugt)

which, once it arrived at its location, would fold out to reveal the display of his work within. Two separate zones were created by unfolding walls – a seated slide show viewing area with a bench that pulled out from the floor and a standing area for viewing drawings. The entire unit could be collapsed into a volume one third of its extended size in just a few moments. It is interesting that although the Biennial was intended to be relocated to other venues this never happened because most of the other exhibits were difficult to move.

In 1986, Böhlingk entered the 'Temporary Living' based on a site in Almere, Netherlands. Organised by the Fantasy Foundation of Almere to stimulate new building ideas for this new polder, an area of land reclaimed from the IJsselmeer, the competition's objective was to explore the potential for building temporary houses on sites unsuitable for long-term occupation. A semi-rural site for seventeen houses in Almere was given temporary

planning permission as a nearby busy road was thought to make it unsuitable for permanent dwellings. The prize for each of the successful entrants was the use of the site for five years and 4500 guilders (approximately 2000 Euros) towards the cost of construction. Böhlingk's concept was to build something portable instead of something temporary. A temporary house, even if built from fully recyclable materials, would result in wasted energy, whereas a portable dwelling could simply be re-sited. Though he was the only designer to take such an approach, his entry was chosen to be one of the seventeen winners. Although the design was one of the smallest buildings, it has been one of the longest to reach completion, taking ten years of painstaking effort to be realised. The Markies is named after the Dutch word for the movable fabric awnings used to protect windows from the sun – it is also a play on the theme of royalty suggested by the word 'marquis'. This name suggests a simple



Fig. 11.3 The 'Temporary Living' competition site in Almere.

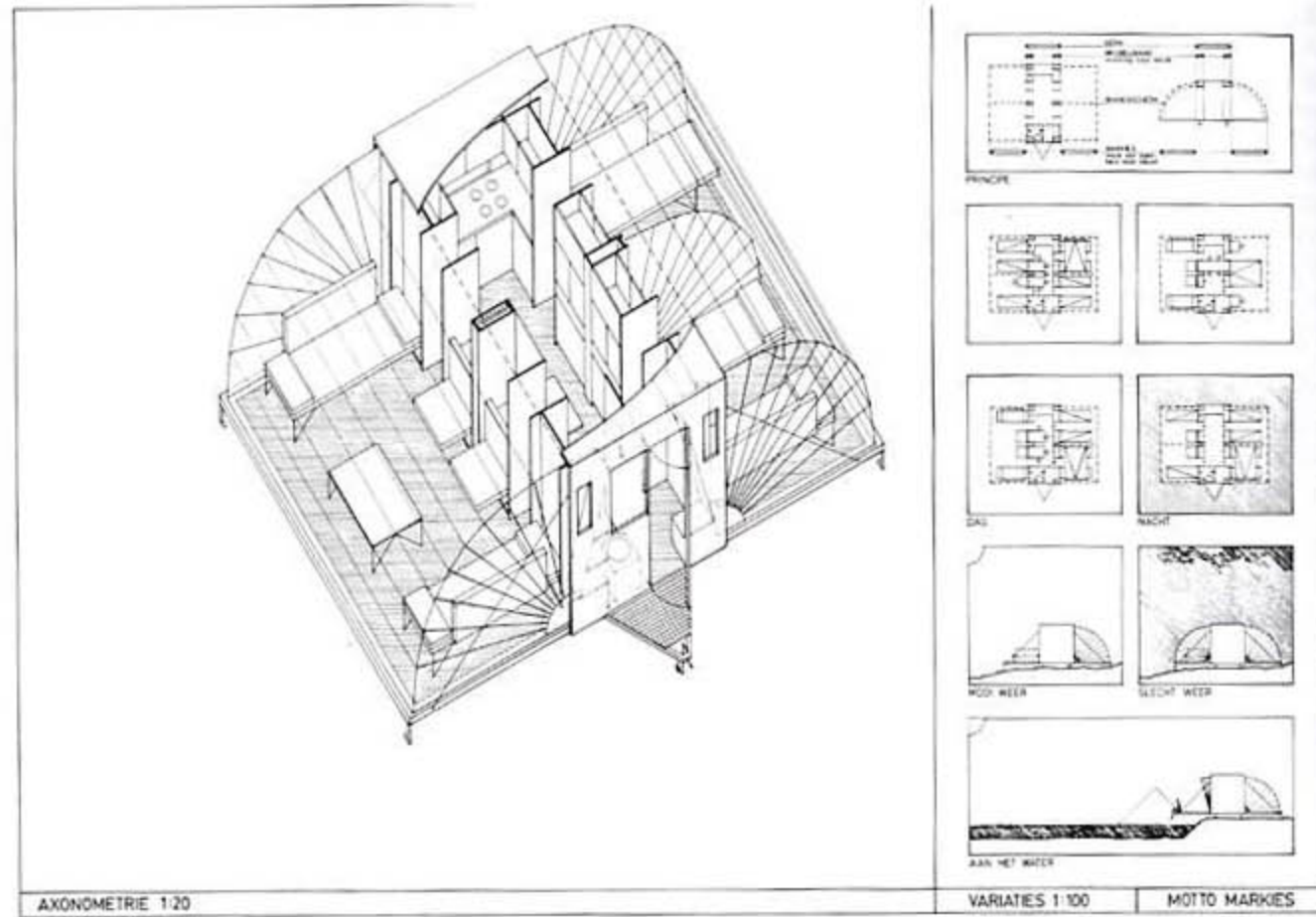


Fig. 11.4 Markies: competition entry drawings.

shelter but one of very high quality – a concise and accurate description of the design ambitions for the project.

When preparing his submission for the competition Böhlingk realised that he must not only convey the simplicity of his idea, but also the quality and the depth of detail that would be an important part of its realisation. In selecting his design to be one of the winners the judges recognised and praised this aspect of the entry describing it as ‘exceptionally clever and lucidly drawn’. As a result the drawings which were prepared in 1986 are remarkably similar in almost every detail to the completed building.

Böhlingk makes it clear that the intention of the Markies was not to be a caravan or travel trailer but a real mobile dwelling. When his family go camping they prefer to stay in a tent – to be close to nature and to enjoy the specific environment of being outside. Tow-able caravans are designed to be

capsules containing amenities for comfort and shelter. Although some very expensive models have small push-out volumes in sleeping and living areas, the user is primarily contained within the linear space of the vehicle – it is only the awning that extends this space out into the landscape. The Markies is completely mobile but not intended for daily towing from place to place. It is a real dwelling that is as comfortable as a permanent home, but with three important additional features: it can be moved to a new site easily; it contains all its furniture and fittings as integral parts of the structure; and it retains close contact with the environment in which it is situated. The building was designed with the competition site in Almere in mind – it has a rural aspect adjacent to a canal but also has mains services and road access. However, as with so many mobile buildings this was only identified as a typical site – the Markies actually works at a wide range of different types of sites.

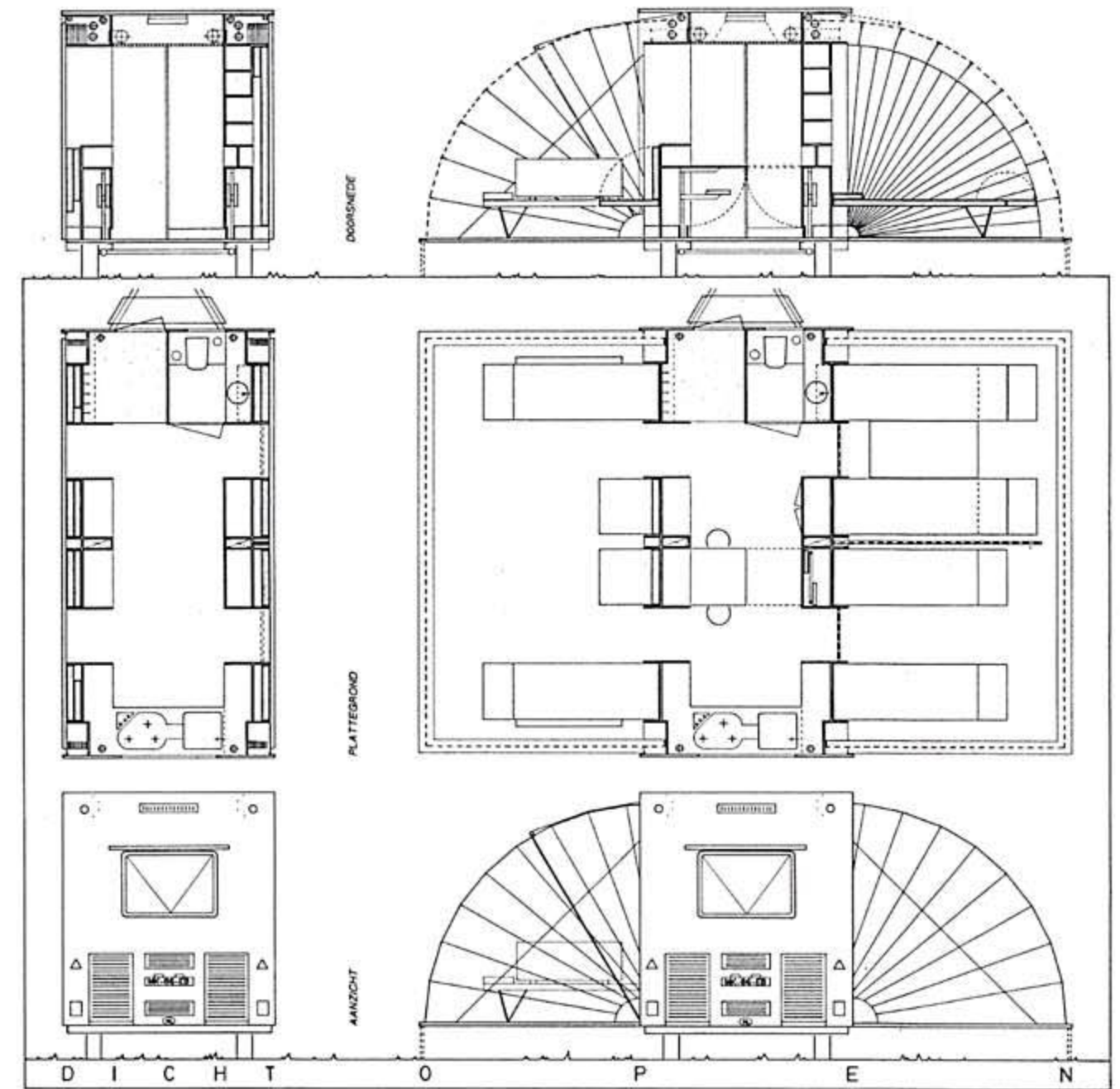


Fig. 11.5 Markies: detail drawing of final version.

The transportation dimensions of the structure are 4.5 metres by 2.2 metres, however, the floor area is tripled when the side panels are dropped to their deployed position increasing the width of the dwelling to 6.6 metres. Entry, with a small hallway and coats store, is at the end adjacent to the towing hitch. The dining and cooking area contains all the storage compartments. To the left of the entry is

the integrated shower room and WC. All these primary facilities are built directly onto the Markies' main chassis and they can be accessed whilst the side floors remain in their travelling position. The fold-down area to the left of the entrance has two bedrooms, each with its own door. The area to the right is the living space. All the furniture is specially designed and manufactured and forms part of the

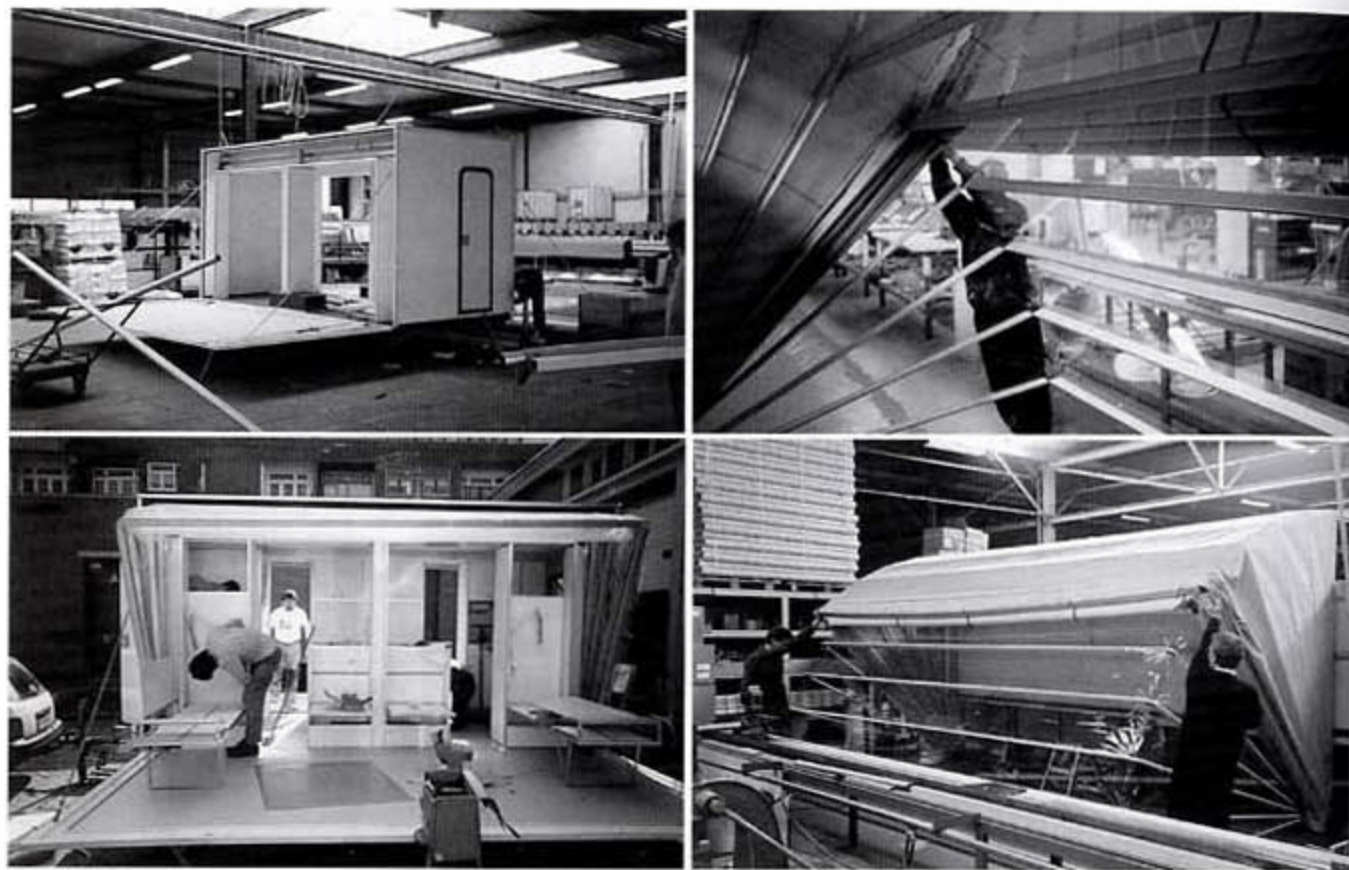


Fig. 11.6 Markies: construction photographs.

building's structure. The dining table folds down from a storage area, dining stools swing out from beneath. Living area chairs and settees fold down from the walls. The four beds also fold down, each revealing a wardrobe recess.

After the competition, Böhrling set about finding a sponsor to help pay for and build the Markies. As he had designed a product which he believed possessed easily understood commercial precedents combined with a realisable construction strategy, he imagined that it would not be difficult to find organisations who would recognise the design's commercial potential and wish to become involved in its realisation. However, this was not the case. Though many manufacturers were full of praise for his design they were unwilling to risk capital on developing it as a product. There was an inherent conflict between Böhrling's belief that building the product for the first time had to be done at a high quality. His view was that you did not have to prove the concept – that was already clear – but you did have to prove that it worked and that it worked well. Whilst continuing with his

'fixed' architectural practice work he continued to search for and meet with potential sponsors. It was suggested many times that in order to get it built he should compromise and build it cheaply, but Böhrling believed that this would have the effect of preventing future potential – people would not see the mobility or any of the other features of the design, they would just see the cheapness.

In 1991 Böhrling came to the conclusion that the only way he would get the Markies built to the standard he required was to pay for it himself. Consequently, he completely revised his construction strategy, beginning the search for materials, builders and manufacturers who could assist with the project over a staged period as funds allowed. He divided the construction process into three distinct parts: the chassis, walls, floor and roof; the sunscreen and deploying mechanisms; the built-in furniture and interiors. Beginning in 1992 on the conventional standard steel chassis and towing assembly (a gift from mobile site-hut manufacturers de Meeuw), the superstructure was made by coach-builders van den Born. For the main struc-



ture Böhrling had to find a system that was both strong and comparatively light. Though both sides of the building fold down they would provide useful rigidity during transportation; however, the structure must of course also remain rigid when unfolded at the site. He chose a hybrid system of 30 mm polyester coated Multiplex sandwich panels strengthened at the edges with bonded steel or aluminium sections. The panels consisted of 1.5 mm polyester, 4 mm multiplex, 19 mm polyurethane, 4 mm multiplex and 1.5 mm polyester. The main core of the building was formed of these panels which were glued and screwed together and also as a unit to the separately made steel chassis. A key feature of the Markies design is its easy conversion from mobile to static configuration, and so it was essential that as many elements of this process as possible were completely automatic. Consequently, Böhrling decided that all substantial movable elements of the structure must be motor operated by the touch of a button. The side panels that become the main cantilevered floors when unfolded are suspended from steel counter-weighted chains which are winched in and out by an electric motor. The awnings are also electrically operated, this time on rollers, and were made by the specialist sunscreen and awnings manufacturer Mado. The main awning on the living area side is 1mm thick transparent PVC, though there is a secondary screen which is used as a sun-blind or for privacy. On the sleeping area side the awning and the sunscreen were made from opaque Ten Cate technical fabric of a 50% polyester/cotton weave. The fold down fabric divider between the two 'bedrooms' was made of Luxaflex Duette braced with aluminium strips. All the awnings and sunscreens can be pulled down to any desired position. The aluminium framework of the awnings was specially designed to be strong but also to be flat-packed into a tight space for transportation. The awnings were the only part of the Markies to be sponsored, and have subsequently been used for publicity purposes by the manufacturer.

Building the furniture was an especially complex task. It was important that all the furnishing elements could be folded into the structure of the building, be light and extremely compact, but

Fig. 11.7 Markies: unfolding sequence (photograph by Roos Aldershoff).



Fig. 11.8 Markies: interior photograph of the kitchen/dining area – the living area is to the right and the sleeping area to the left (photograph by Roos Aldershoff).

also be able to survive the demands of a growing family. The panels were made of 15 mm thick Poplar Multiplex with vinyl or synthetic resin coatings. In some cases where extra strength was required (for example the beds and seats) a hollow rectangular section steel frame was made to support the panel system. A metal worker and a furniture maker were employed to make the separate components before assembly into the structure took place. The building is serviced by plugging it into mains supplies similar to those found at a touring caravan site, there are no water tanks or batteries in the prototype. However, the design is flexible enough to make it completely independent if more remote sites become a part of the brief for future versions.

The Markies has two distinct forms – mobile and static. When it is mobile it is anonymous, an unremarkable travelling object. When it is deployed into its static configuration it turns into a completely different object with a number of

obvious connotations associated with tents and caravans but also with accordions, prams and butterflies! It is this last image that stays in the mind, because the changing process is so natural and effortless – like a butterfly unfolding its wings. The building is unhitched from the tow vehicle in the required position, services are connected, the entry door opened and the button pressed to fold down the side panels to form the living areas. Other buttons are pressed to lower the awnings and then chairs and beds are dropped or swung into position. The whole process takes moments. No advanced technology has been used in the creation of the Markies, and this is really not the point – what is impressive is the simplicity and the quality of its operation and design. All the operating elements work in an effortless way. There are no superfluous features or gadgets. The choice of, and relationship between, the individual components that have been brought together to make the entire



Fig. 11.9 The Markies on mass-market television.

dwelling workable seems to be inevitable. This is not a project whose worth rests on dramatic innovative technology but on quality of concept and execution. However, it does grab the imagination...

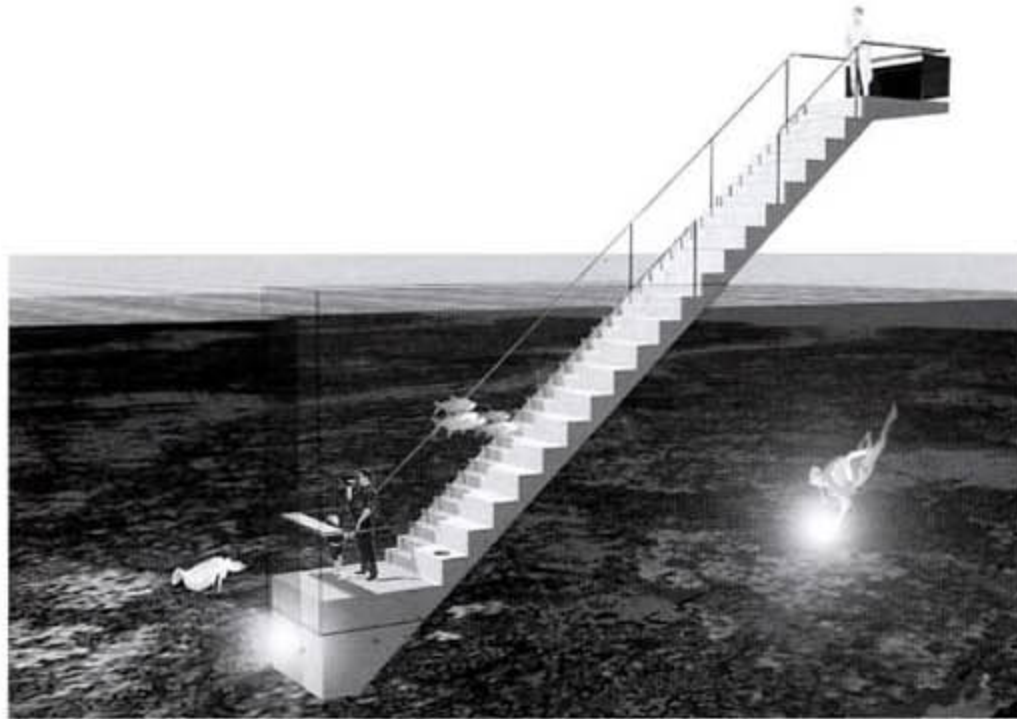
Once the Markies became a reality, public appreciation of it changed. In 1996 it won first prize in the public's choice of the Rotterdam Design Prize, a widely publicised national design competition which was the first event to establish it as a practically achievable product. It has subsequently been published widely in national and international press. It has featured on television both in mass culture popular shows and in specialist design magazines and is in demand for exhibitions and events that range from the Vitra Design Museum's touring exhibition 'Living in Motion' to the annual Camping and Caravanning Fair in Amsterdam. Böhlingk makes the point that the Markies is not a design object that is set within prescribed boundaries – it is appreciated by both the general public and design professionals. This is because it fulfils two distinct criteria that do not frequently occur simultaneously in the same object – it is both a good product and it is a good design. The Markies, when not employed in its touring promotional role, is still used as a family holiday home on the site at Almere. Of the seventeen plots, thirteen are now occupied by buildings resulting from the 1986 competition and four from a subsequent second round. Though initially intended as a temporary

development, public interest has been so high that the development has become a permanent one.

Böhlingk is now working towards the development of a mass-production Markies that will differ from the original in a number of ways. The prototype weighs 2500 kg, twice the weight of a small caravan and heavier than is practical for towing by a family car. The mass-production model will therefore be lighter and perhaps also smaller if necessary. Other differences are that the fold-down side panels may be operated by hydraulics, and internal corners will be rounded. The proposed manufacturing strategy is to make the first '0' series Markies for twenty customers who will have extensive after-sales care. This project is to be a collaboration between the awnings manufacturer who was the prototype's only sponsor and a conventional caravan manufacturer. Böhlingk estimates that the Markies project has so far cost him about 45,000 Euros in design time and manufacture costs. The most recent estimate of the cost of the mass-production Markies is 20,000 Euros.

During the decade-long gestation period of the Markies, Böhlingk has continued to explore the concept of mobile structures. In 1990 he achieved the distinction of perhaps being the first architect to win a competition by fax, creating a light-hearted design for a dwelling based on the form of Aldo Rossi's famous coffee pot La Cupola in a competition organised by the architectural journal *Architectuur and Bouwen*. Böhlingk also used a

Fig. 11.10 Spotter: photomontage.



mobile concept to win the 2000 competition to design a new under and over water observation point held by the National Park Oosterschelde in the Zeeland estuary in the south Netherlands. This radical concept was to create a mobile floating platform consisting of a staircase that mysteriously disappears beneath the water's surface. The design consists of a single set of reinforced concrete steps with a small platform at each end. The underwater platform is 6 metres below the surface protected by a thick glass wall which displaces sufficient liquid to make this bottom part perform like the hull of a boat. The top platform is elevated 4 metres above the surface of the water providing an outstanding view of the surrounding water and landscape. Lights below water level illuminate the submarine environment and a pump and submerged ballast ensure the platform remains in balance. Though this structure is based on the well-tested phenomenon that lowering the centre-of-gravity of a marine vessel provides it with an inherently stable platform, construction funds have yet to be released to build a prototype.



Fig. 11.12 Mobile Unity – a selection of 'furniture' elements.

Böhtlingk's latest mobile design has also been developed from a competition project though in this case his entry did not win because the judges, in his words 'just did not get it'. The Mobile Unity

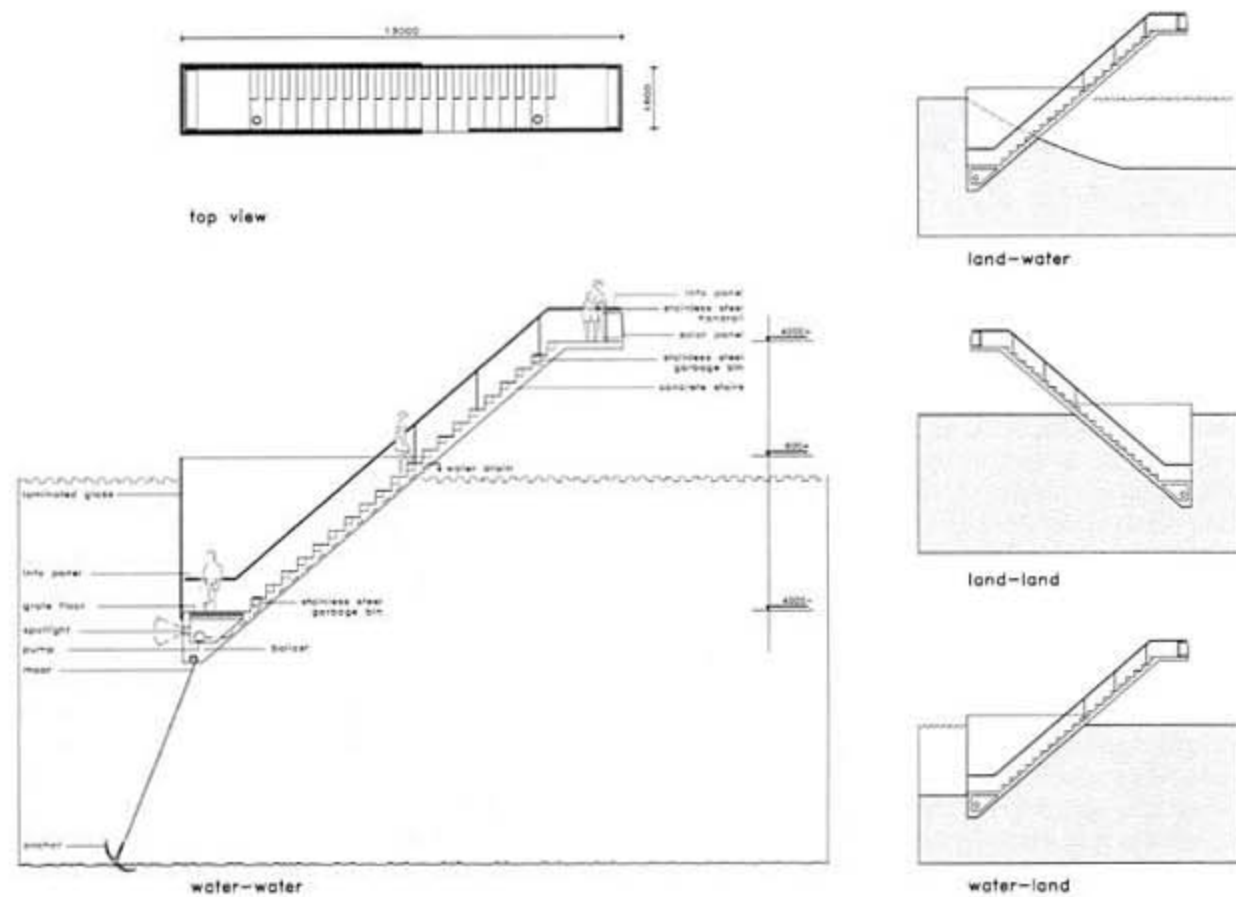


Fig. 11.11 Spotter: plans.

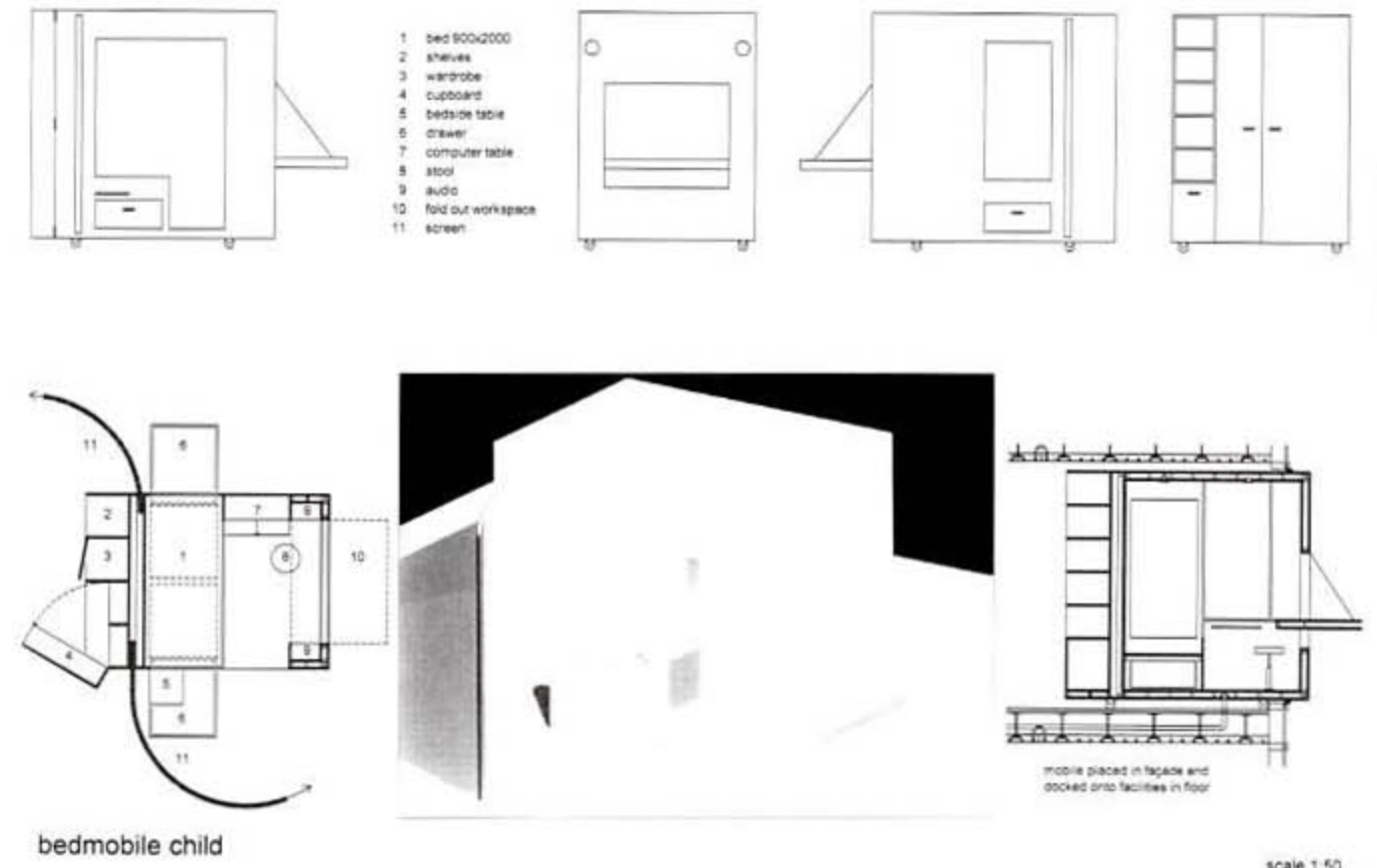


Fig. 11.13 Mobile Unity – Bedmobile for a child.

project is intended as a completely new approach to designing the contemporary commercial house. Originally created for the New Landhouse design competition organised by the Municipality of Almere in 2001, it is intended to challenge the conventional system of delivering houses in the commercial market. The concept is once again based on Böhrtlingk's belief that architecture can begin with the design of furniture. He believes that this is particularly so for the vast majority of people who primarily understand the space in their homes, and the way they use it, in terms of where the furniture is placed. Böhrtlingk takes what is clearly a limitation and unravels it to provide a positive design approach – using domestic furniture as the starting point for the design of a new dwelling. The project title 'Mobile Unity' derives from the fact that both people and their furniture are mobile, and when they interact they unite. It is influenced by Böhrtlingk's 1999 design for a children's day-care centre in which he created a range of small, house-like, furniture objects that had real functions like sleeping and washing, but also helped with adjustment to a new environment through play. Instead of designing a specific house type for the competition Böhrtlingk therefore chose to create a process which works by encouraging each member of the household to design their own furniture, and thereby leading them into the design of their own space. Further into the process the relationships of the different members of the family could also be understood in terms of the spaces they share together. This approach turns the design of a house on its head by creating the form and placing of the furniture first, and afterwards establishing the envelope into which it fits.

To convey this new process Böhrtlingk has suggested a range of standard furniture mobiles which group together the various functions of a recognisable domestic space; for example, a bedroom, or a bathroom. These have been made into carefully designed units that are easily movable as an integrated element, a tactic that draws on the Markies experience. This introduction to design becomes comparable to a computer game, disposing elements and spaces to reach the goal of optimum choice and arrangement of facilities. Once the 'game' is complete the client could choose between varying degrees of standardisation and specification for both the furniture and the envelope to meet higher or lower cost levels for their dwelling. However, even if a client used a set of completely standard furniture mobiles their new home would still be unique and their understanding of the spaces

they created more sophisticated than if they had simply filled a standard house layout with possessions purchased with regard to the usual considerations of fashion, cost and availability.

The mobile aspect of this project lies in two areas: the flexibility possibilities of rearranging the house by simply relocating the furniture mobiles within the envelope, and the possibility of reinventing the house when the furniture is redeployed to a new location. The challenge of this project is to first establish if there is sufficient interest in the market to allow a prototype to be created. The success of customised kit homes in parts of Europe, North America and Japan suggest this might be so. However, it would undoubtedly take a revolution in commercial practice to change most house builders' current practice away from providing fixed plans to which occupants must adapt, towards infinite variety in plans to which the builder must adapt.

Böhrtlingk's design work is based in the realm of dedicated problem solving. His exploration of mobile concepts is pursued in this spirit – to provide another way in which to find appropriate solutions to specific design problems. The Markies is clearly a small project yet its media impact has been considerable. It has captured the general public's attention for its realistic yet romantic proposal for a mobile house. Design professionals recognise the simple yet sophisticated approach to detailed problems. It is undoubtedly in the tradition of the caravan and the mobile home; however, like the Airstream trailer it also has status as a design object. Unlike the Airstream, it manages to explode out of the linear space restraints determined by road transportation. It also delivers that quintessential element of the best mobile architecture – the sense of event when it transforms from its mobile to its static condition. In the case of the Markies this is also a metamorphosis from the enclosed and mundane to the open and extraordinary.

Further Reading

- Capella, Juli, 'Microarchitettura II grande in serie' in *Domus* 797, 1997.
- 'Extendible Caravan with Tent Roofs' in *Detail* No. 8, *Mobile Structures*, December 1998, pp. 1422–1425.
- Mollerup, Per, *Collapsibles: A Design Album of Space-Saving Objects*, Thames and Hudson, London, 2001.