

ACCESSIBLE MICRO LIVING

How large is the smallest possible accessible housing unit?

This was the question of a seminar at the Technische Universität Berlin on the Model + Design course. The objective was to emphasise accessibility as an obvious and natural building task, to sensitise students and to make them aware of the topic of accessibility. At the same time, the seminar aimed to highlight the need for diversity and flexibility, especially in housing construction. Not only in Berlin are rising property and rent prices, a growth in the number of single households and an increasing number of older people factors that require new approaches to solutions from planners and designers, developers and contractors. In the seminar, the integrative approach of co-living offers were worked up by the students and further examined in cooperation with the Senate Department for Urban Development and Housing, Lucerne University of Applied Sciences and Arts and the Construction Economics unit of the Technische Universität Berlin. Ten very different approaches were created in the form of models and illustrations for residential buildings typical for Berlin. An accessible housing unit developed in scale 1:1 in the seminar forms the core of the exhibition. This was built by the central workshop of the Technische Universität Berlin. It is the object holder for all models and plans and is itself an exhibit in the exhibition.

Wohnregal

The Wohnregal (“residential shelving”) is made up of two building parts: The modular concrete structure made of precast minimum housing units with an area of 23.46 m² each and the generously sized access balcony made of grating, which also serves as a translucent shading element. On the ground floor of the “Wohnregal” are the communal bicycle room, and two other units, which can either be used as additional communal rooms or as a launderette or can be rented as commercial space. The housing units are divided into the three function zones of sleeping, personal hygiene and cooking. Two sliding walls separate the zones from each other. By opening the entrance door, the outdoor and indoor space merges and the cooking zone becomes part of the communal area on the access balcony with a south-western aspect. The modular structure of the “Wohnregal” can be used on other plots of land. It can be enlarged or reduced in size according to the requirements and, due to the access, can be adapted flexibly depending on the orientation and local circumstances.

Maison Balcon

The design lives through strict zoning of public areas, to communal areas through to private areas. The external circulation zone, which is limited to the minimum necessary access area, is situated on the roadside. In addition to stairs and a lift, this area also offers use as a terrace and invites people to stay a while. Adjacent to it, the communal zone begins with a

kitchen and eating area, a work area and a living and relaxation lounge. This zone is characterised by the space appropriation and interaction of the residents. The six private residential units with minimised area face the inner courtyard. Two units per storey are accessible or are suitable for two persons. The limiting of the area in this zone enables a generously sized communal zone. The three zones differ in the materials used: The access zone is a front-mounted steel structure, the communal zone is characterised by wood-based panels and the private retreat living zone by closed walls.

All in one

Accessibility is enabled here by flush thresholds, which allow the resident to cross from the street into their apartment and achieves adequate manoeuvring spaces in front of kitchen units and sanitary appliances. To shorten routes, a generously sized area is provided on the ground floor for supporting commercial use such as a restaurant or food store. In addition, the focus is on optimising the areas. To this end, a 15m² apartment type was developed. This minimally fitted out type of apartment allows up to 10 housing units per storey. The maximum capacity utilisation with 10 housing units, is compared with floorplan options with 8, 6 and 5 housing units with varying communal areas. As soon as the communal area crosses into an access area, it has a positive effect on the lettable area and offers the resident the possibility of interaction and community.

Co-life

In general, communal areas are included on a pro rata basis in the rents of the residents. Therefore, in addition to the rent for a residential unit, tenants also pay for a share of the communal area, whether they use it or not, which is uneconomical for low-wage earners interested in micro-living. The concept therefore further develops collective living. Communal areas are not only provided for the residents, but all interested parties, similar to the co-working principle. Communal areas which, in addition to workplaces, workshops and kitchens, can also have many other uses, are not only available to the residents, but also persons in the neighbourhood and beyond. The residents have the option to preferentially book uses if necessary. In this way, as a commercial unit, the communal area can finance itself and at the same time, provide the residents with an offer that is not available in their micro-apartments.

The core – 1:1 apartment

The floorplan idea for this type of apartment was the positioning of a central room – here the bathroom – which divides the compact one-room apartment into different zones, without separating these from each other by walls. The route to the core leads from the entrance area, through the kitchen area into the sleeping area – i.e. from the public to the private space.

Wohnwand (wall unit)

Two housing units are compared, which enable people with and without physical limitations to live in a small space. The units are designed as multi-functional single-cell units, which cover the needs of daily living in the smallest possible space. The central part of the respective units is a specially designed, 1 metre deep multi-functional wall. This is adapted to the limitations of the residents. For example, in the 16 m² housing unit, sleeping can take place in a bed integrated in the wall. Below the bed there is a pull-out tabletop with pull-out seating, which in turn serves as storage space in its 2nd function. Furthermore, there is a kitchenette in this wall. The 24 m² apartment for people who need a wheelchair, was designed taking into consideration all necessary clearance and circulation areas. In order to create additional comfort and convenience, in addition to a paternoster (rise and fall) cabinet system, a standing area for the outdoor wheelchair is also provided in the wall unit.

Collectively accessible

Though a non-orthogonally configured volume, the generously sized communal area is divided into various spaces, which can be used in diverse ways. The volume contains 4 bathrooms, a kitchenette and storage space. The space required for the private areas is kept to a minimum in favour of the communal area. On each storey, 5 single and one double room are arranged at right-angles to the façades. Functional walls easily transform these night-time sleeping rooms into private living rooms during the day.

Lebensweg

The “Lebensweg” (path through life) project is based on the observation that older people often live in apartments that are much too large for them, after their children have left home. The apartments are frequently not laid out to enable individual rooms to be sublet. This produced the idea of designing an apartment, in which it is possible to spend your whole life, without having to waste living space or forego privacy. To achieve this, the apartment must be capable of adapting flexibly to the changing needs of the residents during the course of their lives. There are three basic units with bathroom, to which one or two rooms can be adjoined. The basic units are matched to the different stages of the residents’ life. In this way, a total of 10 different apartment types are created, which can be combined with each other in 6 different ways. The apartments make do with minimum space and are accessible. A typical life would progress as follows: A student moves into the smallest basic unit. If they find a partner, a room is added. If the two start a family, they move into the next basic unit and add another room. If a second child arrives, the third basic unit is added, which is used by the parents as a bedroom with private bathroom. If the children move out, the first room can be handed over to someone else, and then the middle basic unit. The third basic unit becomes the open-plan kitchen, to which there is an adjoining bedroom for the older couple. If one of the partners dies, the final room is relinquished and the basic unit becomes a studio flat for

one older person. It is conceivable that two persons buy a storey at the start of their life and share it. Depending on their requirements, the rooms they do not need can be sublet to different people for a limited time, so that there is no vacant space.

Revealing barriers

High shelving, wide steps or low ceilings. What can be a great help for some, can become an insurmountable obstacle for others. The »Revealing Barriers« model examines individual standards of residential and living space and scrutinises the standardised space design as well as how it is perceived and used. Using four exemplary body profiles, the model represents different barriers in the space and becomes an interactive setting.

Move

MOVE offers the possibility of responding flexibly to the spatial standards of the residents. The apartment's floorplan is divided up by eight spatial "compartments". Sliding doors, which can be stowed away in the "compartments", separate the rooms from each other and provide the possibility of interconnecting rooms. Each room is separated from the corridor by a wall unit. This is also slidable, and thus provides the possibility of closing off individual rooms from the communal space. In addition to the sliding doors, each "compartment" accommodates further storage space and a washbasin, to provide residents with additional privacy. The communally used room of the apartment is in the middle of the apartment and provides two bathrooms, one of which is accessible, a kitchen and two open living.