

# Multi-family living space expressing simultaneous and linear way of living



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*"To give the building a clear and logical structure, we have to design according to rational and objective criteria".*

Peter Zumthor [1]

The separation of architectural space, shapes the structure intended to meet specific aesthetic, legal and utility guidelines. The separation of space in multi-family buildings is carried out by creating a place for the house or for its extension, and the construction of the space can be done using different activities and methods.

## Introduction

Living space in a contemporary residential building is subject to qualification. The construction of an architectural building space is executed by a series of activities, methods and goals in a context that determines psychological, sociological, technological, technical, economic or legal aspects. There is synergy between the person and the place of being at all levels. The construction of

a house and apartment gives the possibility of new conditions for comprehending actions in space in the context of actions determining the condition of living. The separation of the space defined by Bruno Zevi may take place physically (materially) or non-physically (intangibly) [2]. Research shows that shaping the apartment takes place in two dimensions. First defines the apartment as a place, whereas the second defines the apartment

as a state determined by a set of activities, the so-called condition of living. The notion of an apartment as a place is related to the assumptions regarding the design of a place, while the notion of an apartment as the living space refers to a set of activities that determine the condition of living. However, factors such as convertibility or non-convertibility as well as stability and mobility define the manner in which the activities determining



Fig. 1. Residential and service complex at Grunwaldzki Square; source: author

The construction of an architectural building space is executed by a series of activities, methods and goals in a context that determines psychological, sociological, technological, technical, economic or legal aspects. There is synergy between the person and the place of being at all levels. The construction of a house and apartment gives the possibility of new conditions for comprehending actions in space in the context of actions determining the condition of living.

the conditions of the living space are executed. The consequence of transformability or non-transformability of space is carried out in the form of the simultaneous or linear (chronological) models of performed activities. On the other hand, stability and mobility constitute a state of the possible shift towards the environment. The results demonstrate that the purpose of separating the space is to create a place for living designed to meet specific requirements, and the construction of the space and the manner of performing activities determining the condition of living is not clear. This paper reports the results of an analysis of the residential apartments of a multi-family residential building at Grunwaldzki Square in Wrocław, designed by Jadwiga Grabowska-Hawrylak. The research was carried out on the basis of projections of a repetitive floor in two variants. The plans were tested relating to the model of performing activities determining the condition of living on the basis of a simultaneous and a linear (chronological) model [3].

### Buildings at Grunwaldzki Square

Design works concerned with the construction of a residential and service complex at Grunwaldzki Square (Polish "Manhattan") were carried out by Jadwiga Grabowska-Hawrylak from 1963 to 1968, when the final project intended for implementation was approved. The buildings give an example not only for the scale and originality, but also for cooperation with Jerzy Hryniewiecki as a consultant, the author of post-war architecture icons such as the "Spodek" sports and entertainment hall in Katowice, the Supersam building

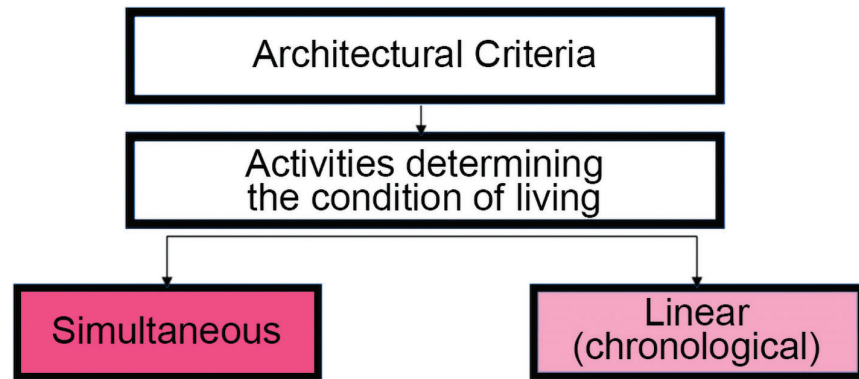


Fig. 2. Models of performing activities determining the condition of living [3, s. 131, 165]; source: author

and the Dziesięciolecia Stadium in Warsaw. Moreover the person of Wojciech Świąciki, civil engineer, cooperating with Grabowska-Hawrylak in almost all projects [4]. Jadwiga Grabowska-Hawrylak in cooperation with Igor Tawryszewski, Maria Tawryszewska, Edmund Frąckiewicz and Wojciech Świąciki as the authors team of Miastoprojekt Wrocław, implemented projects such as the House of Scientists building and Mezonetowiec building, which together with the analyzed "Manhattan" constitute icons of Polish modernism [5]. The team's design process, along with subsequent conceptual versions, has evolved both from the functional side, as well as from the internal structure and construction. After obtaining the approval of the Ministry of Construction and Building Materials for the assumed height of sixteen floors, the project started as a consequence of the execution of six different conceptual studies carried out over the course of five years. In terms of urban planning, the residential and service complex obtained its final form in 1967, constituting an urban microstructure consisting of twenty-three modules on a square plan and a span of twelve meters. The service space, shops, cafes, bars, were concentrated in two or one-story pavilions. The pedestrian communication was raised above the road level, forming a platform for pedestrian traffic. The car parks for residents with garages were placed under the platform. The final form of the complex and individual residential buildings is the result of the adopted structural layout and the use of a prefabricated frame structure made of "H" frames in a transverse configuration which allowed for freedom in shaping the residential interiors and the layout of the external façade. The frame system that created the structure of the skyscrapers provided architects freedom in terms of the development of the living space. The walls did not have a load-bearing function, offering freedom in forming internal divisions. In addition individual apartments can be combined and divided freely. The only limitations are the internal walls, the central staircase and the lifts constituting

the inner core as well as the columns of the structure's framework and technical risers [4, pp. 162-163]. In the projection, the skyscrapers indicate the features of the transformable space and the possibility of using the model of performing activities determining the condition of living based on a simultaneous and a linear (chronological) model.

### Research process

The research process was carried out on the basis of repeating floor plan of apartment in a multi-family residential building at Grunwaldzki Square in Wrocław. Architectural factors were determined on the basis of the space qualification criterion related to the model of activities that determines the conditions of living. The result is a graphic record that shows a simultaneous and a linear (chronological) model of activities that determine the condition of living. The simultaneous model and the linear (chronological) model refer to the manner of performing activities determining the condition of living as a criterion for shaping the housing space (place) in terms of culture [3, p. 164].

### Simultaneous model

The simultaneous execution of activities that determine the condition of living offers some of the most important criteria for shaping the space. The language of architecture is a sign of transmitting the meanings and behaviors of space users, the meaning of the activities performed, culturally oriented and customarily related to the impact and building of the usable space of the interior. The directions determine the way of separating the space and thus the use of technological solutions. Simultaneity specifies the execution of many different activities designed to determine the condition of living in one compositionally designated place in the space, like in one room there is an area for preparing meals, eating meals, watching TV, sleeping, studying and working. Such a state is very often conditioned by historical civilization patterns [3].



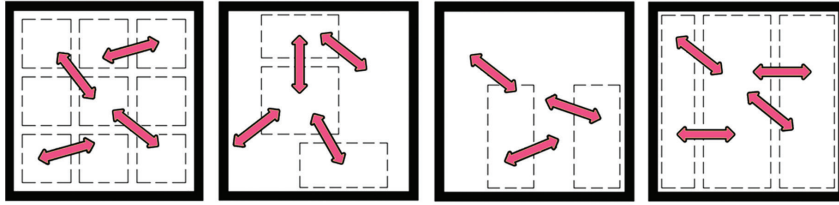


Fig. 3. Diagram of simultaneous performance of activities; source: author

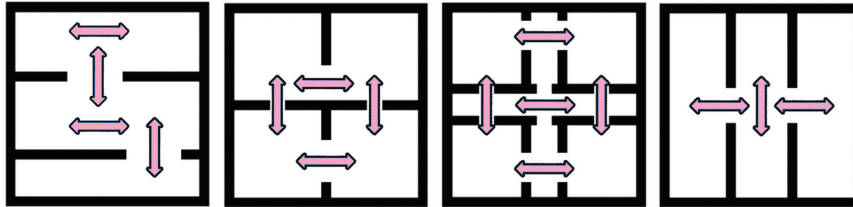


Fig. 4. Diagram of linear (chronological) performance of activities; source: author

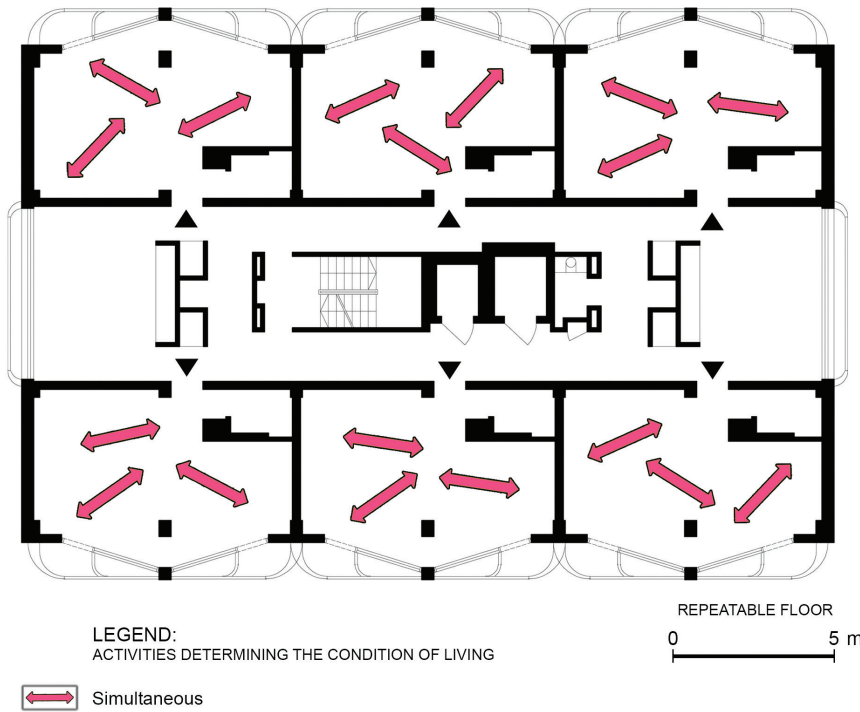


Fig. 5. Schematic view of a repeating floor plan. Division of space in a building expressing simultaneous activities. The analyzes were made on the basis of floor plans in: Michał Duda, Patchwork. Architecture of Jadwiga Grabowska-Hawrylak, s. 156; source: author's drawing

**Linear (chronological) model**

Linear performance of activities determining the condition of living, next to the simultaneous one, is the leading criterion for shaping the space. The linear execution of activities aimed to determine the condition of living constitutes the outcome of the adopted structural layout of the building, the adopted schemes of internal installations, proposals for separating the space in the context of the adopted modules or lighting, location on the plan and the architectural concept as an expression of conveying the meaning and shaping the space. The structural system forms the most common case of imposing

a linear (chronological) execution of the internal spatial layout of an apartment. Linear separation of space allows for the creation of an interior structure designed to meet specific aesthetic, functional or cultural guidelines [3].

**Methodology (research methods)**

This research utilized the method of logical argumentation (for analysis and logical construction). The approach is based on analysis and synthesis using comparisons and generalizations, constructing a logical sequence to solve the problem. The method is used to

verify the adopted test assumptions. For the criterion of activities determining the condition of living, the analyzed apartment plans were verified with the use of the simultaneous and linear (chronological) models. The research techniques were the description and the logical interpretation of the author. The tools used for the research were floor plans of a repetitive layout of apartments, and computer with graphic software. The expected effect was a description of the problem and its academic interpretation [6].

**Results (spatial structure analysis)**

The research was carried out on the basis of two variants of the layout of residential apartments in the repeating floor plan of the building. The results show that the activities that determine the condition of living in the context of the simultaneous model are only feasible in case of the open space variant of the apartment, without dividing the space by means of partition elements. The linear (chronological) model occurs in the case of a space separated by dividing elements into individual internal zones, rooms. In addition, the analyzed example is characterized by a transformable space, whose structural system of the building allows the transformability of the internal space and; hence, the possibility of using a simultaneous or linear model.

**Discussion**

**The search-simultaneism and linearity**

An architectural object is a place located in a separate space. The object-place in space is formed in a variety of ways, but so that it can only be represented by a framework for events, without a specific definition and manner of execution. Simultaneity or linearity is a way of performing activities as well as their place. Architecture is a form of separating space and constructing it from material and immaterial elements. A human being fills the living space with their existence by carrying out activities on various levels in the context of behavior. The activities determining the state of living are the connotation of various contents linked according to similar principles. Research demonstrates that activities determining the condition of living, shape the layout of the space. The space of a house or apartment is created from an increasing number of tangible and intangible elements. The result is the convertibility or non-convertibility of inhabiting space. The features of a transformable space define the model of executing activities in a simultaneous or linear manner. In addition, the multidimensionality and manner of performing activities is presented in the form of a place for events, so-called framework for events. Simultaneity is transmitted using the word meanwhile [7]. An adequate identification of simultaneity in an architectural space

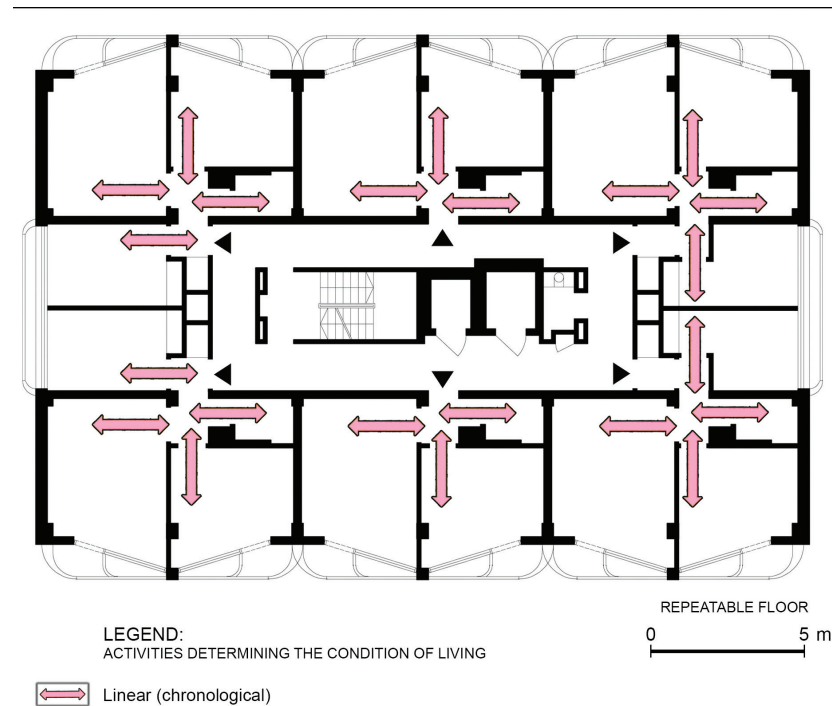


Fig. 6. Schematic view of a repeating floor plan. Division of space in a building expressing linear (chronological) activities. The analyzes were made on the basis of floor plans in: Michał Duda, Patchwork. Architecture of Jadwiga Grabowska-Hawrylak, s. 157; source: author's drawing

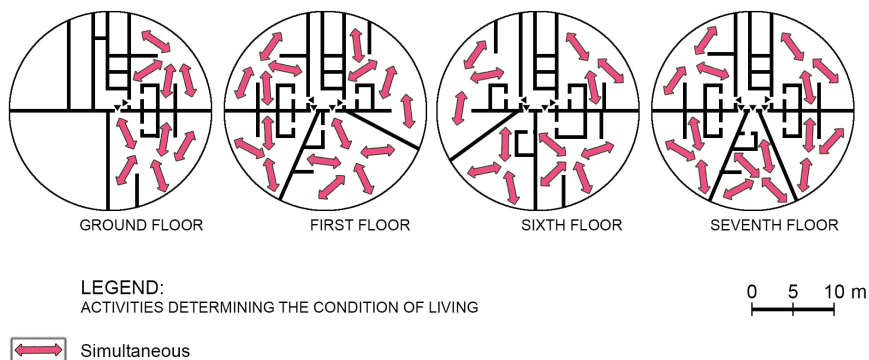


Fig. 7. A group of residential buildings in Kopenhaga-Nordhaven, designed by 3XN Architects [3, s. 175]; source: author's drawing

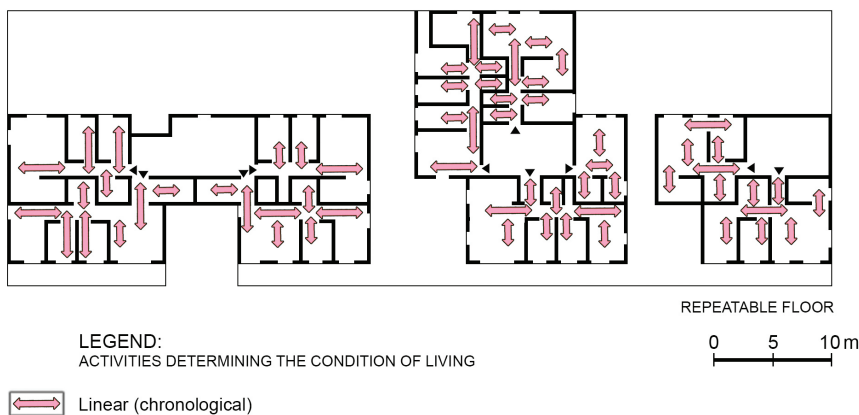


Fig. 8. Promenade des Provinces Francaise residential building in Nanterre, designed by X-TU Architects [3, s. 174]; source: author's drawing

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can be defined as activities performed by users or synchronism of various user processes. On the other hand, linearity is the result of the adopted structural systems and internal division of space, as well we by the adoption of spheres and functional distribution. Looking for examples of simultaneous space in multi-family residential buildings, is worth citing the example of a small complex of residential buildings in Kopenhaga-Nordhaven, designed by 3XN Architects [fig. 7]. On the other hand, the linear (chronological) performance of activities determining the condition of living is shown in the Promenade des Provinces Francaise residential building in Nanterre, designed by X-TU Architects [fig. 8].

### Conclusions

The research reported in this paper investigated an approach to forming the building's structure, axial dimensions, type of construction, materials and the designer's knowledge. A discussion was carried out to determine how these aspects determine multi-dimensional shaping of the space, giving the residents freedom and choice in the way of executing activities that specify the condition of living. Moreover, show the philosophical approach of designing space in the existential context of Heidegger (Lived-space) [8] for which a apartment as a separate space, defined by parameters, is a place where the activities of being in the surrounding being take place. In addition, Bollnow's approach specifying "living" means staying in a specific place, is associated with specific conditions, whereas living in an apartment means performing activities on various levels that relate to the anthropological sense of space, placing space and human existence inseparably, placing humans and their immediate surroundings at the center of everything

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as a fundamental philosophical problem [9]. Conclusions demonstrate the forms of simultaneity and linearity in the same architectural space. In addition, transformability offers the possibility of free creation of activities, possibility of shaping and appearance of a simultaneous or linear internal space. Furthermore, there is a possibility of individual creation of the place personalized by the resident.

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#### PRAWIDŁOWY SPOSÓB CYTOWANIA

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**Abstract:** Factors that affect the way activities are executed tend to determine the condition of living and the model of performing actions. Such factors include the transformability or non-transformability of the structure as well as mobility or stability. These factors have a significant impact on the model of the house and the model of living as a state in a living space. A consequence of the transformability and non-transformability of space forms a simultaneous or a linear (chronological) model of activities that determine the condition of living. The study examines the space of the apartment within a multi-family residential building included in the residential and service complex at Grunwaldzki Square in Wrocław, designed by Jadwiga Grabowska-Hawrylak, using the adopted criteria. The aim was to examine the space in terms of the adopted architectural criteria to perform activities that determine the condition of living based on a simultaneous and a linear (chronological) model. The method of logical argumentation was applied in the research with the purpose of interpreting the selected example. This was performed to achieve the goal by applying a set of planned research criteria. The outcome takes the form of a graphic record of the floor plans of apartments based on two possible cases of shaping the living space. The conclusions show a living space expressing a simultaneous and linear way of performing activities that determine the condition of living.

**Keywords:** simultaneous space, linear space, multi-family housing

**Streszczenie:** WIELORODZINNA PRZESTRZEŃ MIESZKALNA WYRAŻAJĄCA SYMULTANICZNY I LINIOWY SPOSÓB ZAMIESZKIWANIA. Czynniki mające wpływ na sposób wykonywania czynności określających stan mieszkania determinują model wykonywania czynności. Do takich czynników zaliczamy przekształcalność lub nieprzekształcalność struktury obiektu oraz mobilność lub stabilność, które mają istotny wpływ na model domu i model mieszkania jako stanu w zamieszkiwanej przestrzeni. Konsekwencją przekształcalności i nieprzekształcalności przestrzeni jest model symultaniczny bądź model liniowy (chronologiczny) czynności określających stan mieszkania. W pracy zbadano przestrzeń lokalu w obrębie wielorodzinnego budynku mieszkalnego wchodzącego w skład zespołu mieszkalno-usługowego przy placu Grunwaldzkim we Wrocławiu zaprojektowanego przez Jadwigę Grabowską-Hawrylak przy wykorzystaniu przyjętych kryteriów. Cel stanowiło zbadanie przestrzeni pod kątem przyjętych kryteriów architektonicznych pod względem modelu wykonywania czynności określających stan mieszkania w oparciu o model symultaniczny i model liniowy (chronologiczny). Do badań przyjęto metodę logicznej argumentacji, czyli analizy i konstrukcji logicznej, przeprowadzając interpretację wybranego przykładu w celu wykonania analizy w sposób świadomy i konsekwentny dla osiągnięcia założonego celu przez zastosowanie określonego zestawu zaplanowanych kryteriów badawczych. Rezultat stanowi zapis graficzny ukształtowania rzutów lokali mieszkalnych w oparciu o dwa możliwe przypadki kształtowania przestrzeni zamieszkiwania pod kątem przyjętego kryterium. Wnioski ukazują przestrzeń mieszkalną wyrażającą symultaniczny i liniowy sposób wykonywania czynności określających stan zamieszkiwania.

**Słowa kluczowe:** przestrzeń symultaniczna, przestrzeń liniowa, zabudowa wielorodzinną